Special Issue

on

REALIZING SDGs THROUGH HIGHER EDUCATION INSTITUTIONS
FOR SECURING BASIC ESSENTIALS OF WELL-BEING

on the occasion of

AIU CENTRAL ZONE VICE CHANCELLORS' MEET—2022

at

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
(January 20-21, 2022)

#Let'sBeatCoronaTogether

Mr. RAMDASJI ATHAWALE VICHARMANCH

RAMDAS ATHAWALE ARTS & COMMERCE COLLEGE,
NILANGA, TQ. NILANGA, DIST. LATUR

WANTED

Applications are invited for the post of **Principal** to be filled in **RAMDAS ATHAWALE ARTS & COMMERCE COLLEGE, NILANGA, Tq. Nilanga, Dist. Latur** (Permanent Non-Granted) (MAHARASHTRA). Eligible candidates should submit their application along with all necessary Document **within Fifteen days** from the date of publication of the Advertisement by Registered post only.

Sr. No.	Name of the Post (Designation)	No. of Post	Reservation
01	**PRINCIPAL**	**One (01)**	**Unreserved**

Educational Qualification:

A. Eligibility:-

1. A Masters degree with at least 55% marks (or an equivalent grade a point scale wherever grading system is followed) by a recognized University.

2. A Ph.D. Degree in concerned /allied /relevant discipline (S) in the institution concerned with evidence of published work and research guidance.

3. Professor/Associate Professor with a total experience of fifteen years of teaching /research/ administration in Universities, College and other institution of higher education.

4. A minimum of 10 research publication in peer reviewed or UGC listed journals.

5. A minimum of 110 research score as per Appendix II, Table 2 of UGC regulations 2018.

6. **Academic Eligibility and other rules Regulations as per UGC Regulation 18 July, 2018 and Govt. Resolution No Misc-2018/C.R.56/UNI-1 dated 08 March, 2019.**

B. Tenure:-

A College Principal shall be appointed for a period of five years, extendable for another term of five year on the basis of performance assessment by a committee appointed by the University, constituted as per these Rules.

Salary & Allowances :-

Pay scale as per the UGC, State Government & Swami Ramanand Teerth Marathwada University Rules from time to time.

7th Pay Scale : Academic Level – 13 A (131400-217100)

Note :-

1. Prescribed application form is available on the University website **(www.srtmun.in).**
2. No T. A. D. A. will be paid to attend the interview.
3. Eligible candidates those who are already in services should submit their application through proper channel.
4. All attested Xerox Copies of certificates and other relevant documents should be attached with the application form.
5. The vacant post is being filled under the decision of Hon. High Court, Aurangabad Bench Petition No.12051/2015.

Correspondence Address :

The President, MR. RAMDASJI ATHAWALE VICHARMANCH

C/o RAMDAS ATHAWALE ARTS & COMMERCE COLLEGE,
BANK COLONY ROAD, NILANGA, DIST. LATUR

PRESIDENT
MR. RAMDASJI ATHAWALE VICHARMANCH
VIKRAM NAGAR, LATUR

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Opinions expressed in the articles are those of the contributors and do not necessarily reflect the views and policies of the Association

Conceptualizing the Central Zone Vice Chancellors' Meet on Realizing SDGs through HEIs for Securing Basic Essentials of Well-being

Pankaj Mittal* and Sistla Rama Devi Pani**

Since time immemorial environment has remained both a matter of admiration as well as concern to man. Throughout the generations, man admired the beauty of nature but hardly tried to preserve and conserve it. Consequently now, the nature is bouncing back at a higher magnitude and is disturbing the balance of the earth ecosystem. Man's priority for mining and industrialization has not only endangered the survival of all other life forms but has also threatened the very existence of human life. This has become an eye opener for the whole human community and now we are talking about adopting sustainable development practices.

In view of this, the concepts of sustainability and sustainable development are being promulgated at international level by the United Nations. Sustainability, in this context is the development that fulfils the needs of the present generation while guaranteeing the balance between social wellbeing, economic growth and environmental protection so that the needs and well-being of the future generations are not compromised. Sustainable development demands for the rational consumption of available resources in such a manner that it could be kept intact for the generations to come. It implies responsibility on the present generation to use, protect and preserve the environment.

The official definition of Sustainable Development was derived for the first time in 1987 in the Brundtland Report, also called Our Common Future'*,* published by the World Commission on Environment and Development (WCED). According to the Report, Sustainable Development is defined as the development that–meets the needs of the present without compromising the ability of future generations to meet their own needs. While warning on the negative environmental consequences of economic growth and globalisation, the Report also described how it could be achieved.

The 2030 Agenda for Sustainable Development consists of 17 Sustainable Development Goals and associated 169 targets. The SDGs are a comprehensive list of global goals integrating social, economic and environmental dimensions of development. The Sustainable Development Goals provide an international framework to move by 2030 towards more equitable, peaceful, resilient, and prosperous societies while living within sustainable planetary boundaries. SDGs represent the aspirations of the global community and also a valiant effort to push the frontiers of development. The endeavor to achieve the SDG targets needs partnership among various stakeholders i.e. government, academia, civil society, businesses, development partners, international organisations, etc. It is now universally acknowledged that the SDGs represent an elaborate agenda for countries that necessitates achieving progress simultaneously across social, economic and environmental pillars. The inter-connectedness among these goals renders SDGs as planning, implementation and a monitoring challenge. From a global perspective and in its own cause, the need for India to achieve these targets remains imperative. Significant progress has already been made across the country in recent years.

Higher education institutions have the responsibility to aid society in its development and in meeting new challenges as they come along. As educational establishments, their function is to provide able, self-directed learners that are independent and confident and contribute to the society through civic duties. Due to their unique position in the society, they have a critical role to play in the achievement of the SDGs. In fact, realizing the SDGs without the involvement of higher education sector is quite an impossible task. The role of HEIs is thus very crucial if we have to realize all the SDGs. HEIs have a direct

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role in the components of education and research towards realising the SDGs. HEIs can provide the best research-based knowledge and opportune platforms for much needed partnerships. But there are several other known and unknown ways in which the universities can contribute in realizing each one of the SDGs which need to be crystallized collectively through seminars, conferences, discussions etc.

Association of Indian Universities (AIU) as an apex representative body of higher education plays a significant flagship role in motivating and reinforcing the higher education institutions towards the issues of common cause for the society. As research-based policy advise institution, it has always been supporting the Government in various activities related to higher education in general, and youth in particular. In case of working towards meeting the United Nations Agenda 2030 for Sustainable Development also, AIU has initiated its forwards march and is now instigating the universities to join this righteous initiative. It also aims to support the Government in the process of realizing SDGs. As a preliminary step in this process AIU, has set-out to organize all the Zonal and National Vice Chancellors Conferences in 2021- 22 on the themes based on 'Realising Sustainable Development Goals through Higher Education Institutions'. This is in view of apprising the Indian HEIs about their role, and to reinforce them to take up the task of accomplishing SDGs as their prime responsibility. Accordingly, the Annual Vice Chancellors' Meet of AIU in 2021-22 is on the theme Realising Sustainable Development Goals through Higher Education Institutions' which will encompass all the 17 SDGs for discussion. At zonal level, a set of 4 closely related SDGs will be deliberated in each of the Zonal Vice Chancellors' Meets. On the basis of the recommendations of the Zonal and National Vice Chancellors' Meets, a Roadmap for HEIs 'Action Plan on realizing SDGs' and a policy document for the Government entitled 'Realizing SDGs through HEIs' is proposed. This preliminary step is quite crucial to gear the HEIs towards this most urgent, important and inevitable task. The outcome of these Meets will help in providing input to the Government in its efforts to accomplish these goals in our country.

The fourth Vice Chancellors' Meet in the series is the Central Zone Vice Chancellors' Meet which is being hosted by Shri Vaishnav Vidyapeeth Vishwavidyalay, Indore, Madhya Pradesh during January 20-21, 2022. It is on a theme of great national and international consequence ie. '***Realizing SDGS Through HEIS for Securing Basic Essentials of Well-Being'*** in which SDGs 1, 2, 3, and 6 will be taken up. The questions that the sessions in the Meet seek to address are:

i. What is the status of realization of the concerned SDG in India?

ii. What are the reasons for not being able to achieve the concerned SDG to its fullest potential?

iii. What are the strategies which HEIs can adopt to contribute in realizing the concerned SDG?

iv. Recommendations for the Government for speedy implementation of SDGs.

Apart from these fundamental questions, the following questions are proposed to guide the discussions during the conference:

i. What is the assessment of international agencies on India's performance on this Goal, and likely cooperation available from other countries to the HEIs in India for addressing the issues involved in achieving this goal?

ii. What are the Best Practices and Bottlenecks of HEIs in other countries which have performed well in achieving this goal? What are the takeaways for Indian HEIs from them?

iii. What is the cause and effect of accomplishing this SDG in India on achievement of SDGs in global context? How Indian HEIs can support HEIs of other countries in achieving this goal?

iv. How can Indian HEIs contribute substantially towards achievement of this SDG?

The questions pertaining Government and Policy Makers are:

i. What is the progress of India in the global context in achieving this SDG? What are the various social, financial, administrative, governance and other dimensions of addressing the problems involved in achieving this SDG?

ii. What are various challenges and bottlenecks for the country in achieving this goal and what are the specific ways through which HEIs can support the Government in accomplishing this SDG?

iii. What are the administrative, financial and other ways of support that the government can provide to HEIs in their process of achieving this SDG?

iv. How can the Government facilitate national and international collaborations among HEIs to accomplish this Goal?

The questions pertaining Academics and Practitioners are:

i. What are the specific ways through which HEIs can support the Indian Government and the United Nations in accomplishing this SDG? Are there any exemplary cases?

ii. What are the various social, financial, administrative, governance and other dimensions of addressing the problems involved in achieving this SDG? What are the structural barriers/ challenges for HEIs in achieving this SDG?

iii. How can HEIs mainstream this SDG in all key strategies, policies, curriculum, governance, operational and administrative aspects in the HEIs and embed sustainable development component in teaching, research and community engagement?

iv. In what ways can HEIs create capacity, generate skills and produce suitable manpower required to achieve this goal?

v. How can HEIs create quality and resilient systems which can sustain crisis situations like COVID-19?

vi. What are the areas of common interests of different universities which can lead to linkages and collaborations and how can the HEIs engage stakeholders and form partnerships with local authorities, private players, civil society and philanthropic organizations, among others, for strengthening the efforts towards achieving this SDG?

vii. What is the support which HEIs need from Government and international organizations, particularly, the United Nations to accomplish this goal?

As mentioned above, the Meet will have four sessions. The first session is on *Contribution of HEIs in Ending Poverty in all its Forms* based on SDG-1; the second session is on *Contribution of HEIs in Ending hunger and Promote Sustainable Agriculture based on SDG-2*; third session is on *Contribution of HEIs in Ensuring Healthy Lives and Well-being based on SDG-3;* fourth session is on SDG-6: i.e., *Contribution of HEIs in Sustainable Management of Water and Sanitation.*

Contribution of HEIs in Ending Poverty in all its Forms

Data from various sources indicate that more than 10 per cent of the world population still lives in extreme poverty struggling to fulfill the most basic needs like health, education, and access to water and sanitation, to name a few. The poverty rate in rural areas is 17.2 per cent which is more than three times higher than in urban areas. According to the latest reports of the Asian Development Bank, 21.9 percent of the current Indian population is still living below poverty line (BPL). The BPL criteria is currently defined at Rs 32.00 for rural India and Rs 47.00 for urban India as per the expert panel headed by former Governor of Reserve Bank of India Shri. C Rangarajan. Although the statistical figures are subject to the methodology of calculation adopted, none of the figures appearing in different reports and surveys paint a good picture of the country's financial landscape. Even after decades of freedom, India is still struggling with the many effects of poverty. With the nation being home to one-third of the world's poor for a long time, it has never been easy for the larger part of our population to make two ends meet. The country's impoverished state is also a major driver of the total illiteracy and lack of quality in education leading to low degree of unemployment in organized sector. With population explosion, things have worsened. COVID-19 has further contributed to the misery, taking about Million people into its fold. To put this into context, 2020 will be the first time in this century that the number of poor people will rise, in fact the World Poverty Clock is in reverse gear.

Poverty cannot be confined to lack of income or access to resources. It manifests itself in lack of opportunities for education, social discrimination and the inability to participate in decision-making processes and dignity in society. Studies indicate that children in the poorest households are four times less likely to be in school than those of the richest. However, extreme poverty is more a question of survival itself.

Ending poverty in all its forms everywhere is the first goal of the 2030 Sustainable Development agenda which aims to eradicate extreme poverty for all people everywhere in the next 10 years. It calls for ensuring social protection, enhancing access to basic services, and building resilience against the impacts of natural disasters which can cause severe damage to people's resources and livelihoods. Poverty has many dimensions, but its causes include unemployment, social exclusion, and high vulnerability of poor populations to disasters, diseases and other phenomena which prevent them from being productive.

In the first Technical Session there will be deliberations on how colleges and universities can to contribute to the local as well as global communities to eradicate poverty. What can Higher Education Institutions do to tackle the problems of illiteracy, unemployment, entrepreneurship, rural entrepreneurship, agriculture, etc., to alleviate poverty. What could be the Policy inputs for the Government. What could be the Action Points for HEIs and other stakeholders for alleviation of Poverty by 2030. What kind of research can be undertaken in HEIs to alleviate poverty? What will be the strategies adopted by HEIs to realize SDG1?

Contribution of HEIs in Ending hunger and Promote Sustainable Agriculture

As per FAO estimates, a total of 842 million people across the world are estimated to be suffering from chronic hunger, i.e. one in every 9 people in the world is undernourished. The vast majority of hungry people—827 million—live in developing regions, where the prevalence of undernourishment is estimated at 14.3%. In developing countries, almost five million children under the age of five die of malnutrition-related causes every year. Malnutrition is the single largest contributor to diseases in the world.

As per the State of Food Security and Nutrition in the World, 2020 Report, in India, 189.2 million people ie., 14% of the population are undernourished. Also, 51.4% of women in reproductive age between 15 to 49 years are anaemic. Further according to the report 34.7% of the children aged under five in India are stunted (too short for their age), while 20% suffer from wasting, meaning their weight is too low for their height. Malnourished children have a higher

risk of death from common childhood illnesses such as diarrhea, pneumonia, and malaria. The Global Hunger Index 2019 ranks India at 102 out of 117 countries on the basis of three leading indicators -- prevalence of wasting and stunting in children under 5 years, under 5 child mortality rate, and the proportion of undernourished in the population. If we do not profoundly rethink food and agricultural systems and improve them, the number of hungry people worldwide could drastically increase by 2050.

Interestingly, India is one of the world's largest food producers also. The agricultural sector accounts for about 40% of the total employment in India. However, the agricultural, forestry and fishing sectors contribute only 15.5% to GDP value added. The Food and Agricultural Organisation (FAO) estimates that nearly 40% of the food produced in India is lost or wasted every year due to inefficient supply chains. Because of lack of cooling and storage facilities in India about 20% of the entire food production gets lost before it reaches the marketplace.

COVID-19 pandemic has amplified the vulnerabilities of the national food system. It has disrupted local, regional and national supply chains, adding to the impacts of the country's food waste problem. The lockdown measures resulted in severe labour shortages, delaying the mid-April wheat harvest by two weeks. Imports of food have also stalled due to the COVID-19.

The Government of India has prioritized strengthening agriculture through measures in irrigation, crop insurance, and improved varieties. The government has also taken critical steps to enhance food security, including through an India-wide targeted public distribution system, a National Nutrition Mission and the National Food Security Act. The *Rashtriya Krishi Vikas Yojana*. Recently, two Farm Bills have also been passed.

Sustainable Development Goal 2 : End Hunger achieve food security and improved nutrition and promote sustainable agriculture' seeks sustainable solutions to end hunger in all its forms by 2030 and to achieve food security. The aim is to ensure that everyone everywhere has enough good-quality food to lead a healthy life. Achieving this Goal will require better access to food and the widespread promotion of sustainable agriculture. This entails improving the productivity and incomes of small-

scale farmers by promoting equal access to land, technology and markets, sustainable food production systems and resilient agricultural practices. It also requires increased investments through international cooperation to bolster the productive capacity of agriculture in developing countries.

In the Session on SDG-2: In India we have 74 Government Agricultural Universities who can do a yeoman jobs towards sustainable agriculture in terms of teaching, research and extension activities we need to deliberate on strategies to end hunger, achieve food security and improve nutrition, and sustainable agriculture. ways and means to improve food and agriculture sectors in India; How universities especially Agricultural Universities can help tackle the climate change issues, prevent degradation of soils, fresh water, oceans, forests, and biodiversity; bolster economic growth; How to build resilience against natural disasters which contribute to food insecurity issues etc; In nutshell, we need to discuss, how universities can work towards providing sustainable, nutritious and affordable food choices; facilitating food production work towards food markets; introducing measures to reduce food waste etc; What could be the Policy inputs for the Government; What could be the Action Points for HEIs and other stakeholders; What will be the strategies adopted by HEIs to realize SDG 2.

Contribution of HEIs in Ensuring Healthy Lives and Well-being

Health is a fundamental human right and a key indicator of sustainable development. Poor health constitutes suffering and deprivation of the most fundamental kind. Poor health threatens the rights of children to education, limits economic opportunities for men and women and increases poverty within communities and countries around the world. In addition to being a cause of poverty, health is impacted by poverty and strongly connected to other aspects of sustainable development, including water and sanitation, gender equality, climate change and peace and stability. Not only does disease impact the well being of an individual but it also burdens family and public resources, weakens societies, and squanders potential. The health and well being of people at all ages therefore lies at the heart of sustainable development. Protection from disease is not only fundamental to survival, but it enables opportunity for everyone and

strengthens economic growth and prosperity. We have made immense progress globally in finding newer treatments, vaccines, and technologies for healthcare, but affordable access to quality healthcare remains still a dream in India.

As per the results of a large-scale survey by Ministry of Health and Family Welfare in 2019, over 70 per cent of Indian women and 59 percent Indian men were found to be unhealthy. The health risk assessment took into account multiple health aspects like nutrition, lifestyle, physical activity levels, immunity, disease affliction and others to draw this conclusion. Overall, the country had a high share of people with diabetes and heart problems.

India has made some progress in reducing its under-five mortality rate, which declined from 125 per 1,000 live births in 1990-91 to 50 per 1,000 live births in 2015-16, and its maternal mortality rate, which declined from 212 per 100,000 live births in 2007-09 to 167 in 2013. A quarter of global TB cases occur in India where nearly 2.1 million people live with the disease, and an estimated 423,000 die annually as a result. The Indian government's National Health Mission prioritizes national wellbeing and is bringing change in this area. Despite, some notable progress in recent years, significant challenges remain. Women in the country continue to lack access to sexual and reproductive health care; billions of people are left without access to essential medicines, millions of adults and children suffer from undernourishment with severe effects on health. Further, with an increase in economic integration and mobility new health challenges and risks are emerging, threatening lives and livelihoods. COVID-19 is one amongst has posed a big challenge to the health systems.

Sustainable Development Goal – 3seeks to make a global effort to eradicate disease, strengthen treatment and healthcare, and address new and emerging health issues. It calls for innovation, and research in these areas to further enhance public policy efforts. A holistic approach to better health will require ensuring universal access to healthcare and to making medicine and vaccines affordable. It also calls for a renewed focus on mental health issues. Goal 3 also aims to substantially reduce the numbers of deaths and illnesses caused by air, water and soil pollution and contamination. The HEIs have

contributed immensely in this sector especially during COVID times, when a lot of innovation were done on low cost quality masks and ventilators.

In the Session on Goal 3: Ensuring Healthy Lives and Well-being, there will be deliberations on how HEIs can impact on health system of the country. Role of health universities, general universities, technical universities, pharmaceutical institutes and various other universities on improving health status of the country; How the Indigenous and traditional health systems can contribute in achieving the health goals; How Research and Community Engagement can help in achieving this goal; Eat-Right Campuses and Fit India campaigns; innovations to provide affordable health system, research on various diseases, prevailing in Indian subcontinents, contribution of universities in ensuring rural community health creating low cost devices and solutions, medicines for general public, health information system etc. Policy inputs for the Government; Action Points for HEIs and other stakeholders; Strategies to be adopted by HEIs to realize SDG 3.

Contribution of HEIs in Sustainable Management of Water and Sanitation

Clean water is critical to survival and access to water and sanitation are basic human rights. Its absence can impact the health, food security and livelihoods of families across the world. Every year millions of people, mostly children, die from diseases associated with inadequate water supply, sanitation, and hygiene. More than two and a half billion people have gained access to improved drinking water sources since 1990, but 666 million people are still without it. Researchers at MIT have estimated that by 2050, more than half of the world's population will live in water stressed regions. Between 1990 and 2015, the proportion of the global population using an improved drinking water source increased from 76% to 91%, however, each day, nearly 1000 children die due to preventable water and sanitation-related diarrheal diseases.

Although our planet has sufficient fresh water to provide regular and clean water supply for all, bad economics and poor infrastructure are skewing the supply unfavourably. Droughts, Floods and other water-related disasters account for 70% of all deaths related to natural disasters. Global goals and national priorities on reliable energy, economic growth, resilient infrastructure, sustainable industrialisation, consumption and production, and food security, are all inextricably linked to a sustainable supply of clean water. Hydropower is one of the most crucial and widely-used renewable sources of energy.

In India, two-thirds of homes have no drinking water facility from a treated tap source, and four-fifths are devoid of closed drainage connectivity for discharge of wastewater. While 87% of the households use tap, tube-well, hand-pumps and covered wells as the main source for drinking water, only 47% have the source of water within the premises. A good 36% households still have to fetch water from a source located within 500 meters in rural areas and 100 meters in urban areas. Evidence also indicates that 17% women in the rural areas have to walk more than half a km to get water for their families and for their cattle, and 55% of them are forced to bath in the open because they do not have any private bathing facilities. In addition, more than half of Indian homes having no toilets within their premises and drainage facilities is also another serious problem. Manual scavenging is still widespread in India. As per the data, over 1% of all households in both the urban as well as rural areas continue to rely even today on this practice. In over 13 lakh toilets, the waste is flushed into open drains and cleaned by humans. Around 25 crore households, nearly 12 lakh in rural areas and 13 lakh in urban areas depend on manual scavengers to remove night soil from the toilets.

Poor sanitation can have a ripple effect when it hinders national development because the workers suffering from illnesses and living shorter lives produce and earn less, and therefore cannot afford education and stable futures for their children. These challenges will only worsen and the impacts on people will only increase as competing demands for clean fresh water and sanitation are exacerbated by the effects of climate change putting more pressure on water quality and availability. India is a groundwater economy. At 260 cubic km per year, our country is the highest user of groundwater in the world–we use 25 percent of all groundwater extracted globally, ahead of USA and China. These conditions will create increasing risk for businesses, agriculture, households, energy generation, industrial use, ecosystems which is a matter of concern for governments, communities and the environment.

In the Session on SDG-6 Sustainable Management of Water and Sanitation' there will be deliberations on Strategies to create sustainable availability of potable water and Sanitation facilities; India's Water and Sanitation Crisis: causes and remedies; Efforts of Indian Government for Water Conservation and Management: Initiatives, Achievements & Failure, schemes like *Swachh Bharat Abhiyan* etc. Innovations for tackling the issues of sanitation. Sustainable water management, case studies from India on water conservation and management, research on devising low cost water filters to clean water, cleaning of rivers, linking of rivers, saving water, stopping wastage of water through floods, water harvesting techniques, low cost sewage treatment plants, ensuring good sanitation system etc. sanitation and hygiene; Smart technology & innovation in water and wastewater treatment, Pathways of community participation and cooperation for water conservation. Community Engagement activities; Research studies which universities can take up in these areas; Governance and Management of Universities to train the students; Policy inputs for the Government; Action Points for HEIs and other stakeholders; Strategies adopted by HEIs to realize SDG 6.

Conclusion

An adequate framework is needed for adequate implementation of SDGs through HEIs. Successful implementation of SDGs needs individuals and organizations with the relevant sustainability skills, knowledge, capacity, values, and motivation to respond to the complex challenges of the society. HEIs can play a significant role in spreading knowledge and creating awareness in the society to adequately achieve the UN global agenda of sustainable development by 2030. There is a need to identify roles which HEIs can play during the process of implementation of each of the SDG. The Recommendations of this Central Zone Vice Chancellors' Meet are expected to pave way for meeting the UNSDGs 1,2,3 and 6.

Note: The material for preparing this Paper has been collected from various websites of The United Nations, Government of India, NITI Aayog, and various other sources. The Authors duly acknowledge all the sources, particularly the websites of United Nations, Government of India, NITI Aayog.   ❒

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore: A Profile

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore is hosting the Central Zone Vice Chancellors' Meet 2021-22 of the Association of Indian Universities (AIU), New Delhi on January 20-21, 2022.

Shri Vaishnav Vidyapeeth Vishwavidyalaya is a State Private University set up under Madhya Pradesh Niji Vishwavidyalaya (*Sthapana Avam Sanchalan*) Adhiniyam in 2015 at Indore. The university has been established with the vision to be a leader in shaping better future for mankind through quality education, training and research. It pursues the mission to make a difference in sustaining the growth of global societies by developing socially responsible citizens.

About Shri Vaishnav Trust

1884 is a landmark year as the foundation stone was laid 138 years ago for Shri Vaishnav Group of Institutions by compassionate philanthropists of Indore, MP (India). Shri Vaishnav Vidyapeeth Trust believes in taking the nation forward by improving the quality of life of its citizens by continuously working in the sphere of education, health and environment. It has been established to promote education and research in various disciplines through academic Institutions for the benefit of all sections of the society, but not with the motive of profit. Some of the dignitaries who have visited Shri Vaishnav Institutions from time to time are: Dr. Sarvepalli Radhakrishnan (1960), Shri Giani Zail Singh (1984), Dr. Shankar Dayal Sharma (1987), Dr. APJ Abdul Kalam (2002), Shri M. Venkaiah Naidu (2019), and Shri Om Birla (2020).

The University Campus

The campus of Shri Vaishnav Vidyapeeth Vishwavidyalaya spread in 52-acres with sprawling and picturesque surroundings, provides a refreshing environment, stimulating intellectual alertness and creativity. The extended university campus with state of art facilities is designed by one of the top 10 Architects in India, CP Kukreja and Associates from Delhi. The campus has an ambience that motivates the students to grow. The university has more than six lakh square feet constructed area housing several classrooms and syndicates. The campus is having computer centre, and automated library, academic and administrative blocks, conference rooms, an auditorium and sports facilities. The overall atmosphere on the campus is distinguishable by serenity, which is conducive for intellectual pursuits. The university aims to:

- offer a world class scholastic experience to learners;
- ensure holistic growth of the students;
- explore opportunities to pool resources and synergies with the best universities across the world in developing a world-class institution;
- create programs that are in line with the economic development of the nation;
- establish lasting relationship with industry for mutually beneficial solutions; and
- learn the best practices of top universities around the world.

Shri Vaishnav Vidyapeeth Vishwavidyalaya is having 16 constituent institutes with 310 full time faculty membrs and around 7000 students enrolled in 114 undergraduate, postgraduate and doctoral programs. The university offers education, training and research in engineering, forensic scence, architecture, management, journalism and mass communication, science, social sciences, humanities and arts, computer applications, fine arts, commerce, law, agriculture, and home science. The university believes that educational institutions should involve industry in designing the curricula and detailed syllabi for various programs. Partnership with industry and other prospective recruiters is necessary to understand the current and future needs so that young minds could be shaped accordingly. It gives a different kind of feeling to the students, while choosing such programs for developing their career.

The university has signed MoU with Hanyang University, South Korea and St. Cloud State University, Minnesota, USA for establishing alliances related to:

1. exchange of faculty, students and researchers;
2. cooperation in such activities as joint research, lectures, symposia and country visits for students;

3. exchange of data, documentation and research material in the fields of mutual interest;

4. work towards cooperative educational programs for the future; and

5. evolve new programs with integrated multidisciplinary approach offering multiple skills in the field of engineering and technology, management and other disciplines.

SVVV is offering number of programs with the technical support of IBM, redhat, Apple, TCS, Impetus, Tata Power, and Infosys. The programs are also offered in association with Mahatma Gandhi National Council of Rural Education at the undergraduate and postgraduate levels in the area of Rural Management. The response of the students to such programs has been quite overwhelming. Even industry has welcomed such initiative.

SVVV has entered into an MoU with BOSCH India, under which UG and PG students of the university are given opportunity to develop their enterperneurial and employability skills. The university has also set up a 'Factory Automation Laboratory' in collaboration with Mitsubhishi Electric India. Under this MoU, lab equipments worth Rs. 30,00,000/- have been provided to the university for training of students.

Another initiative of the university is to invite eminent scientists and others who have contributed signfiicantly to the science and society. The objective being to inspire the students and young faculty. The university has hosted number of such luminaries so far:

(i) *Aryabhatta Memorial Oration* was instituted by the university in 2016. The oration held annually was delivered by Padma Vibhushan Dr. Anil Kakodkar (2016-17), Padma Bhushan Dr. K Radhakrishnan (2017-18), Padma Vibhushan Dr. Vasudev K Aatre (2018-19), Padma Bhushan Prof. P Balaram (2019-20), Padma Bhushan Vijay P Bhatkar (2020-21) and Padma Bhushan Dr. T Ramasami (2021-22).

(ii) *The C.V. Raman Memorial Orations* were delivered by Padma Shri Dr. GD Yadav (2018-19), Padma Bhushan Prof. MS Raghunathan (2019-20), and Padma Shri Prof. Rohini M Godbole (2020-21).

(iii) To commemorate the contribution of *Vikram Sarabhai*, the university had distinguished speakers like Padma Shri Dr. PI John (2018-19),

Padma Shri Dr. Vikram C Thakur (2018-19), Padma Shri Dr. Dipankar Chatterji (2018-19), Padma Shri Chandrakant Pithawa (2019-20), Padma Shri Dr. Sudhir K Jain (2020-21) and Padma Shri Dr. Navin Khanna (2021-22).

(iv) The *1st Srinivasa Ramanujan Memorial Oration* was delivered by the Shanti Swarup Bhatnagar awardee, Dr. Amalendu Krishna of TIFR Mumbai (2018-19) followed by Shanti Swarup Bhatnagar awardee Dr. Mahan Maharaj of TIFR Mumbai (2019-20), Padma Shri and Bhatnagar awardee Dr. Manindra Agrawal (2020-21), and Bhatnagar awardee Prof. Naveen Garg (2021-22).

(v) The *1st Sunderlal Bahuguna* Memorial Oration was delivered by Padma Bhushan Dr. Anil Prakash Joshi, an environmentalist and green activist on 24th August, 2021.

(vi) The *1st Mokshagundam Visvesvaraya* Memorial Oration was delivered by Padma Shri Dr. MYS Prasad on 15th September, 2021.

Other eminent speakers who have visited the university to grace the various ocassions are Padma Vibhushan Dr. R A Mashelkar, Padma Bhushan Dr. D R Mehta, Padma Bhsuhan Dr. VK Saraswat, Padma Bhushan Dr. Shyama Chona, Padma Shri Dr. Sankar Kumar Pal, Padma Shri Prof. Ajoy Kumar Ray, Padma Shri Dr. Puru Dadheech, Padma Shri Dr. HC Verma, Padma Shri Mr. Abhay Chhajlani, Padma Shri Dr. Ravindra Kumar Sinha, Padma Shri Prahlad S Tipania, Padma Shri Dr. Deepak B Phatak, Padma Shri Balu Mondhe, Padma Shri Dr. Ratan Thiyam, Padma Shri Bansi Kaul, Padma Shri Sushil Doshi, Padma Shri Dr. Pushpesh Pant, Dr G Satheesh Reddy - Chairman, DRDO, and Dr. SV Nakhe – Director, RRCAT.

Shri Vaishnav Vidyapeeth Vishwavidyalaya, being value based activity driven institution, gives due importance to human values. A course on *Professional Ethics and Human Values* is taught to all the undergraduate and postgraduate students of the university, irrespective of the stream or program. The students are also involved in social projects to sensitize them about the realities of life. All undegraduate students are taught a course on *Environment and Energy Studies* to make them realize their responsibility towards environment. Further, in the case of B.Tech. program, eighth semester is dedicated to industrial internship. It is strongly believed that theory and practice can be effectively bridged by encouraging the students for meaningful internship.

The university also focuses on all round development of the students. Many activities like conferences, seminars/webinars, workshops, study tours, industry visits, site visits and cultural - sports - literary events have been initiated by the university since its inception. Apart from these, constituent institutions of the university also organize specific programs related to their domain to groom the students.

To bridge the gap between school education and university education, SVVV organizes a conclave of School Principals every year. Shri Vaishnav Vidyapeeth Vishwavidyalaya (SVVV), Indore, and the Indian Association of Physics Teachers-IAPT jointly organized the 35th National IAPT Convention and National Seminar on Innovation in Physics Teaching & Research from 28th to 30th November, 2021.

During difficult times of lockdown, the university was among the first few in the country to immediately adopt the Online teaching-learning methedology from the first week of April, 2020 onwards. This not only helped the students in successfully completing their course curricula but also in taking their online examinations so as to fullfill all academic requriements. The constituent institutes of the university conducted more than 300 webinars during the pandemic on diverse topics. The technology came as a 'lessing in disguise' and university is now planning to move in the direction of blended mode of teaching-learning during Post-COVID-19 era.

Centres of Excellence

Centre of Excellence in Plasma Research: Padma Vibhushan Dr. Anil Kakodkar, Eminent Nuclear Scientist and Former Chairman of the Atomic Energy Commission of India inaugurated the 'Centre' on 10th August, 2016. The funding bodies like Department of Atomic Energy, DST and MPCST have supported various research projects with more than Rs. 1.34 Crores so far. A research project has recently been approved by Geological Survey of India on 'Molecular Insight of Coal - a multipronged approach for use of Indian coal in cleaner and greener way'. This project will be executed by SVVV jointly with Pandit Deendayal Petroleum University, Gandhinagar and S.N. Bose National Centre for Basic Sciences, Kolkata.

Centre of Excellence in Happiness Studies: Happiness is the degree to which an individual judges the overall quality of his/her life-as-a-whole positively, or in short how well one likes the life one

lives. Increasingly, collective happiness is considered to be the proper measure of social progress and the goal of public policy of any society across the globe. The primary objectives of the Centre are: (i) to facilitate research in the area of innate happiness of human beings and the society they live in and further understand the benefits of happiness, (ii) to explore the factors that lead to happiness and wellbeing, (iii) partner with organisations, firms, and government establishments to help them discover the route to happiness for their members through research and consultancy assignments, and (iv) to promote happiness amongst the SVVV fraternity through various activities like Awareness Camps, Laughter Club and other events, which will act as stress busters and contribute towards happiness of the members.

Centre of Vocational Studies: To provide the vocational training to progressive farmers and the unemployed educated youth. An emphasis in vocational education is also on development of attitudes, knowledge, and skills for entrepreneurship and self-employment. Now-a-days, vocational education has got due impetus due to the development of science and technology. The planning and implementation of the program certainly helps in controlling and solving the problems of educated unemployed of our country. The vocational courses offered by this Centre include seed production, vermin composting, mushroom cultivation, and apiculture.

Centre of Excellence in Sustainable Development: The adoption of conservation and recycling practices on a wider scale can be a move towards cleaner and more energy efficient technologies. We at SVVV follow the principle of Reduce, Recycle and Reuse. Energy or Power is one of the most important aspects of human life. In today's world, power generation and conservation have gained significant importance. Shri Vaishnav Vidyapeeth Vishwavidyalaya is also committed for energy conservation and clean & green energy generation. In this context, the university had installed a Rooftop Solar Power plant of 150 kw at the campus in 2019. In last 23 months, the plant has generated approximately 4.5 lakh units of clean & green power and in turn helped in saving almost 10,000 trees and 400 T of Co_2 generation.

Centre of Excellence in Simulation and Gaming: Gamification is the application of game-design elements and principles in non-game contexts. The researchers have reported that gamified events were very effective at engaging Gen Z and that team-based

gamification events were particularly engaging. The Centre is mandated to promote simulation and gamification as a pedagogy and undertake research in this upcoming multidisciplinary area of interest. The Centre coordinates with International Simulation and Gaming Association (ISAGA) and other such professional bodies for global networking.

Atal Ranking

Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore had secured its place under top fifty positions in Atal Ranking of Institutions on Innovation Achievements (ARIIA 2020) in the category of Self-finance/Private Institutions. In ARIIA, top-most and leading universities of the country participate. The university has been classified as a promising university in ARIIA 2021. Ministry of Education, Govt. of India has initiated 'Atal Ranking of Institutions on Innovation Achievements (ARIIA)' to systematically rank educational institutions and universities primarily on innovation related indicators. ARIIA considers all major indicators which are commonly used globally to rank most innovative educational institutions/universities in the world.

ARIIA ranking is now getting wide acceptance among HEIs in India and it will certainly inspire Indian institutions to reorient their mind-set and build ecosystem to encourage high quality research, innovation and entrepreneurship. Moreover, ARIIA aims at setting direction of institutions for future development for making them globally competitive and in forefront of innovation. ARIIA primarily focuses on 06 main parameters:

- Programs and Activities on IPR, Innovation, Start-up and Entrepreneurship
- Pre Incubation & Incubation Infrastructure & Facilities to Support I&E
- Annual Budget Spent on Promoting and Supporting I&E Activities
- Courses on Innovation, IPR and Entrepreneurship Development
- Intellectual Property (IP), Technology Transfer and Commercialization

- Successful Innovation and Start-ups & Funding Innovation & start-ups

Scholarships

To facilitate the students and promote merit, number of scholarships have been instituted. Some of these scholarships are:

- Scholarship scheme for meritorious students at the time of admission (in first year only).
- Scholarship scheme for meritorious students (second year onwards).
- Teaching Assistanceship (TA) for Ph.D. scholars.
- Teaching Assistanceship (TA) for M.Tech. students.
- Scholarships to employees and their wards.
- Scholarship to the students of the institutions sponsored by Shri Vaishnav Group of Trusts.
- Scholarship scheme for the physically challenged students.
- Scholarship scheme for the children of defence personnel who had sacrificed their lives during warfare/anti-terrorist or similar activity.

Relief was provided to the Children of Corona Warriors who had lost their lives during COVID-19 Pandemic.

Convocations

1st Convocation of the university, held on 9th June, 2018 was presided over by Hon'ble Governor of the State, Smt. Anadiben Patel. The 2nd Convocation of the university, held on 8th August, 2019 was presided over by Hon'ble Vice President of India, Shri M. Venkaiah Naidu. The 3rd Convocation of the university, held Online on 27th October 2020 was presided over by Former Chairman, Atomic Energy Commission of India, Padma Vibhushan Dr. Anil Kakodkar. The 4th Convocation of the university, held on 20th December, 2021 was presided over by Hon'ble Governor of the State, Shri Mangubhai Patel.

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Sustainable Development Goals and Sustainable Employability

Upinder Dhar*

The Sustainable Development Goals were declared in 2015 as the successor to the Millennium Development Goals and have a target year of 2030. The goals measure different aspects of the economic, social and environmental development within countries. To empirically explore the linkages between sustainable development and well-being two major data gathering efforts can be combined (Sachs et al., 2019). One is SDG Index which measures how far countries are in the process of achieving the SDGs. Second is the Gallup World Poll, which is a survey that is representative of about 98% of the world's population. It includes an item on how people evaluate the quality of their lives, referred to as subjective well-being.

Data on other dimensions of subjective well-being, such as the experience of positive and negative emotions, is referred to explicitly rather than as elements of a more broadly defined subjective well-being. Combining the SDG Index and Gallup World Poll data sets enables us to empirically explore how sustainable development relates to the way people experience their lives. Intuitively, making progress in terms of sustainable development is likely to benefit both people and planet. Detailed empirical work, however, may reveal some tensions where actions needed to achieve sustainability may challenge people into changing behaviours and potentially reducing their well-being at least in the short run.

In fact, large scale social movements such as the "yellow vests" in France were initiated when additional fuel taxes were introduced. While fuel taxes are considered an effective way to induce more sustainable behaviour, they put additional pressure on the lifestyles and purchasing power of people living outside of major cities who require more use of automobiles given that there are less public transport options available to them. Alongside social movements such as the "yellow vests", there are the

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pro-environment movements such as "extinction rebellion" that raise alarm bells over climate change and the need for drastic and immediate measure to reduce the reliance on carbon fuels.

Determinants of Well-being

By analyzing the seventeen Sustainable Development Goals in relation to well-being, a closer empirical look at how sustainable development aligns with the interests of people and planet, but also where there may be inherent tensions that require more complex policy efforts in order to chart a course towards environmentally sustainable and socially equitable growth without reducing human well-being (Bennett et al., 2019; Kroll et al., 2019). A related empirical question concerns the relative importance of each of the Sustainable Development Goals in terms of driving human well-being. All Sustainable Development Goals are important, but some Sustainable Development Goals may be more relevant to well-being than others. This is of interest for a number of reasons. Those Sustainable Development Goals that are most strongly linked to advancing well-being could perhaps be prioritized if budgets are limited, and well-being is considered as a goal of policymaking.

Advancing on Sustainable Development Goals that are negatively correlated with well-being metrics may require complex policy action in order to alleviate other concerns. By relooking at the Sustainable Development Goals in terms of well-being, it can also be shown how their relative importance may change over time. The analyses may provide some broad policy guidelines to policymakers across the world's regions that are keen to advance the well-being of both people and the planet. In line with intuition, the countries with a higher SDG Index score tend to do better in terms of subjective well-being, with the Nordic countries topping both the rankings. In fact, there is a highly significant correlation between the SDG Index and the subjective well-being. This shows the importance of a holistic approach to economic development when trying to improve citizen well-being.

Interestingly, the best fitting model to describe the relationship between the SDG Index and subjective well-being takes a quadratic form indicating that a higher SDG Index score correlates more strongly with higher subjective well-being at higher levels of the SDG Index. This indicates that economic growth is an important driver of well-being at early stages but becomes less significant later in the development cycle. In other words, it implies increasing marginal returns to sustainable development in terms of human well-being. A conceptual model that explores the pathways between sustainable development and well-being finds that the Sustainable Development Goals are strongly related to the 'determinants of well-being'. These are income, social support, generosity, freedom, trust in government, and health. Among the different SDGs, there is much heterogeneity in how they correlate to subjective well-being.

Eradicating poverty in all its forms remains one of the greatest challenges facing humanity (Goal 1). While the number of people living in extreme poverty dropped by more than half between 1990 and 2015, too many are still struggling for the most basic human needs. By 2030, it is envisaged to reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions. It needs to be ensured that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, in heritance, natural resources, appropriate new technology and financial services, including microfinance.

It is aimed to end all forms of hunger and malnutrition by 2030 (Goal 2), making sure that all people, especially children, have sufficient and nutritious food throughout the year. This involves promoting sustainable agriculture, supporting small-scale farmers and equal access to land, technology and markets. It also requires international cooperation to ensure investment in infrastructure and technology to improve agricultural productivity.

Sustainable Development Goal 3 seeks to ensure health and well-being for all at every stage of life. The Goal addresses all major health priorities, including reproductive, maternal and child health; communicable, non-communicable and environmental diseases; universal health coverage;

and access for all to safe, effective, quality and affordable medicines and vaccines. It also calls for more research and development, increased health financing, and strengthened capacity of all countries in health risk reduction and management. Physical, emotional, spiritual, and mental health are critical components of the well-being of individuals, families, and communities and may be reflected in adaptability or resourcefulness in response to change. Knowledge of what supports healthy people exists across multiple dimensions of wellness.

By 2030, it is envisaged to achieve universal and equitable access to safe and affordable drinking water for all (Goal 6). Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations. Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally (*https://www.undp.org/sustainble-development-goals*).

In fact, some of the environmental goals are significantly negatively correlated with subjective well-being. These are Goal 12 (responsible consumption and production) and Goal 13 (climate action). Moreover, there are significant regional differences in these correlations. For example, Goal 10 (reducing inequality) has a correlation with subjective well-being in Europe but is not correlated with subjective well-being in many other regions. As such, these analyses reveal a number of intrinsic tensions between sustainable development and well-being that will hopefully stimulate further research and debate in order to inform policy action.

Sustainability as a Core Strategic Value

The Human Development Index measures the level of welfare within a country by looking at three different indicators: Live Expectancy Indicators, Educational Attainment Indicators, and Standard of Living Indicators. The Life Expectancy Indicator refers to life expectancy at birth. Educational Attainment consists of the adult literacy rate and gross enrollment ratio. Standard of Living is measured by GDP per capita. These data that make up the HDI have much overlap with what the SDG Index measures.

The Global Competitiveness Index consists of 12 pillars: Institutions, Infrastructure, ICT adoption, Macro Stability, Health, Skills, Product Market, Labour Market, Financial System, Market Size, Business Dynamism, and Innovation Capability. This is a comprehensive measure that also has significant overlap with the SDG Index and HDI. The Environmental Protection Index has twenty-four indicators organized into ten issue categories and two policy objectives. These ten issue categories cover: Biodiversity & Habitat, Forests, Fisheries, Climate & Energy, Air Pollution, Water Resources, Agriculture, Heavy Metals, Water & Sanitation, and Air Quality. The Environmental Protection Index is a comprehensive measure of the natural environment that is much wider in scope than the environmentally oriented SDGs.

GDP per capita and the Index of Economic Freedom are also positively correlated with subjective well-being, but less so than number of other indicators. This is perhaps to be expected: economic growth is only one of the many drivers of well-being. In turn, the Index of Economic Freedom gauges how conducive the socio-economic environment is for economic growth. There is relatively weak correlation between the Global Peace Index and subjective well-being. The Global Peace Index is a very broad measure that considers international and domestic conflict, crime, political instability, police force per 100,000 citizens, and nuclear and heavy weapons capability, among others.

The relatively low correlation with subjective well-being and other development indices such as the Global peace Index may be the result of more developed nations also being more likely to have nuclear capability and perhaps a large police force while no less reports of crime than developing countries. It would appear that the Global Peace Index is constructed in a way that does not lend itself easily to gauge the common sense that safe environments to live in would be a necessary precursor to happy communities.

While the overall SDG Index may correlate strongly with human well-being, the question remains whether some SDGs may be more or less conducive to well-being. Most SDGs correlate strongly and positively with higher well-being. SDGs 14 (Life below water), 15 (Life on land), and 17 (Partnerships for the goals) have been found to be generally insignificant. Strikingly, SDGs 12 (Responsible Consumption and production) and 13 (Climate action) have been found significantly negatively correlated with human well-being (De Neve and Sachs, 2020).

What kind of world would result if all the SDGs were achieved? This can be done through the integration of scenario-building exercises with the metrics, modeling, and data collection. Consensus building, envisioning, and scenario planning can also be extended through stakeholder workshops and public opinion research. Innovative methods need to be explored and developed to build broad consensus around the characteristics of desirable futures – both individually and collectively – and the important differences between the two.

Better methods will be required to communicate the complex trade-offs that each future scenario entails, going well beyond narrative descriptions to include videos, movies, virtual realities, and other methods to fully engage people in understanding alternative futures and building consensus on the future we want by 2030. Building consensus also demands that we recognize the likely sources of opposition and the reasons why we have continued so long on a path that damages the planet while failing to serve human well-being adequately.

Recent developments in the business environment have emphasized the relevance of building a sustainable work force. Gradually, the view is gaining acceptance that a one-sided focus on a rather short-term efficient and effective exploitation of natural, social and human resources in organizations is no longer desirable, and should be replaced by a more long-term approach that incorporates the sustainability of these resources. The concept of sustainability has received increased attention since the publication of the United Nation's Brundtland Commission, emphasizing the importance of retaining the world's natural resources for future generations.

Over the period of time, the notion of sustainability has been associated with a broader range of issues, including economic and social elements. More and more organizations incorporated sustainability as a core strategic value, in order to control the long-term impact of their business on the

natural, social and human environments. Especially in the last decade, the notion of sustainability has been extended to include sustainable human resource management and sustainable employability. In general, sustainable employability has been defined as the extent to which workers are able and willing to remain working now and in the future. Three components of sustainable employability have been delineated, which appear crucial for employees' sustained participation in the labour market, namely employability, work motivation, and health.

Sustainable Employability

The promotion of sustainable employability is generally considered a corporate social responsibility. Initially, HR practices for enhancing sustainable employability focused on older workers. Age management concerns those measures that combat age barriers and/or promote diversity with the purpose of maintaining the capability and willingness of workers to remain in work beyond ages at which they previously retired.

Some researchers have studied the impact of different HR practices, such as relating to the provision of new roles, flexible work conditions and training. It has been reported that the provision of training opportunities in particular resulted in higher affective commitment and lower early retirement. The provision of training practices was related to employees' intention to stay with the company through enhanced levels of perceived organizational support. In other words, HR practices that relate to employee development appear especially beneficial for workers' motivation to postpone retirement.

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FromHuman Development Index to Universe Development Index: A Concept that Need to Take Off

Devraj Goel* and Amarendra Pani**

The ultimate aim of existence is full, meaningful, happy, healthy, resonating life, where, ideas spring, feelings flow, motor muscles create, and the self resonates unconditionally with all in unison and uni-verse. With *Yugantar*, that is, from *Satyug, Treta, Dvapar, Kalyug* there has been degeneration in the values and virtues. In Hindi mythology it is said that *Satug* was standing on four Legs, *TRETA* on three, *DVAPAR* on two, whereas, the present *KALYUG* is standing only one Leg. These legs connote values and affect attributes! Earlier, the society was governing the society, after that the state started governing the society, now the economy is overarching both the State and the Society. Earlier, the human beings were respecting the Nature. Now, we human beings have started exploiting the Nature. Instead of treating her as source, we have started exploiting her as resource.

India is a land of *Hare Rama*! *Hare Krishna!* India is a land of Saints and Seers! India is a land of *Avatars and Rishis.* India believes in *Vasudhaiv Kutumbakam*! The aim of India is to realize the development of universe through Uni-verse. For India the existence of every entity is justified. Why Human Development Index only? We are trying our levels best for the growth and development of the Universe. Let us learn to live together. Healthy co-existence of all the entities demands understanding the mysterious ways of the nature. This article tries to make a humble attempt on how to live with the Nature, how to unfold the mysteries of Nature, how to realize knowledge base, feeling base, skill base of the Nature connecting the souls, *Aatma with Paramaatma* and sustaining this connect for sustainable Development of one and all, as a whole, biota, as well as, a-biota.

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Let us introspect! What we want to be! What we are becoming! What our being is! What ultimately our de-becoming! There is a belief that like computer networks we can have fully connected network with 84,00000/= *Yonies,* different forms of life based on their birth location with all through Cosmic Topology! We can live and leave fully meaningfully!

Human Development Index Ranking

The Human Development Index (HDI) provides a single index measure to capture three key dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. The HDI utilizes four key metrics:

- life expectancy at birth – to assess a long and healthy life
- expected years of schooling – to assess access to knowledge of the young generation
- average years of schooling – to assess access to knowledge of the older generation
- gross national income (GNI) per capita – to assess the standard of living

There are two steps to calculating the HDI:

Forming indices for each of the four metrics

Values of each of the four metrics are first normalized to an index value of 0 to 1. To do this, "goalposts" of the maximum and minimum limits on each metrics are set by the UNDP, as shown below:

- With the actual value for a given country, and the global maximum and minimum, the dimension (indices) value for each metric is calculated as:
- Dimension index= (Actual Value- Minimum Value)/ (Maximum Value-Minimum Value)
- The dimension index is therefore 1 in a country that achieves the maximum value and it is 0 for a country that is at the minimum value.

Aggregating the four metrics to produce the HDI

Once each of the individual indices have been calculated, they are aggregated to calculate the HDI.

The HDI is calculated as the geometric mean (equally-weighted) of life expectancy, education, and GNI per capita, as follows Income)

$$HDI = (Index\ H * Index\ E * Index\ Income)^{\frac{1}{3}}$$

Rank of India in Human Development Report

Out of 189 countries, India has ranked 131 on the Human Development Index 2020 prepared by the United Nations Development Programme (UNDP) (Table-1). With an HDI value of 0.645, the country fell in the medium human development category. The UNDP has revised and updated the underlying data and adjusted the goalpost, making it difficult to accurately compare India's ranking this year and in 2019. However, the UNDP in its country report gave some statistics tracing India's journey in human development between 1990 and 2019.

Universe Development Index (UDI)

Every entity in this universe has its own identity and place from ant to elephant. Everyone has the right to live fully meaningful happy, healthy and resonating life, with interrelation, interdependence and integration with harmonious coexistence in *Universe*. All the biota and a-biota have the right to exist. At the same time, we know that mass can neither be created nor destroyed. Though the forms change.

Some of the debatable questions are: Demolishing colonies and building multistoried for elites! Is wrong, or right? From legacies nurtured,

from dreams sustained, from development together to creating segregated elites- Is it wrong, or right? Exploitation of farmers and striving laborers is wrong, or right? From Nalanda (*naaland dadati iti*), that is *vipul* or a*bundance* to plagiarism and stereotype- is wrong or right! Our Teacher Education is evidently lost, because, mostly educationists have become disoriented and education is in quest of own identity- Is it wrong, or right? Where is our Research and Development?

The National Education Policy (NEP) (2020) has recommended for revival of our ancient education culture through multidisciplinary higher education. This is an opportunity. Let us invest on education and research, revive our legacies, live and develop together, with continuous connect with the Nature. Let us learn to co-exist harmoniously, let us revive culture of the orient. Let us uni-verse, transcending time-space and mind!

The NEP (2020) is in quest of the ethos of the ancient *aryavrut* universities. But where are the *dwarpandits* and *acharyas* of that wisdom. Where are the Learners of that profile? Nalanda and Takshshila were the universities which were the true representatives of the Universe. Is there any university at present globe over which truly represents the universe, studies the universe and connects with the universe and sings in tune with the universe, wherein, *geetam, vadyam, nrutyam and sangeetam* coexist with science & technology. Is there any university which helps in connecting the

Table -1: HDI Rank of Top 10 Countries

Rank	Country	HDI Value (2019)	Life expectancy at birth (years) SDG3	Expected years of schooling (years) SDG 4.3	Mean years of schooling (years) SDG 4.6	Gross national income (GNI) per capita (PPP $) SDG 8.5
1	Norway	0.957	82.4	18.1	12.9	66,494
2	Ireland	0.955	82.3	18.7	12.7	68,371
2	Switzerland	0.955	83.8	16.3	13.4	69,394
4	Hong Kong, China (SAR)	0.949	84.9	16.9	12.3	62,985
4	Iceland	0.949	83.0	19.1	12.8	54,682
6	Germany	0.947	81.3	17.0	14.2	55,314
7	Sweden	0.945	82.8	19.5	12.5	54,508
8	Australia	0.944	83.4	22.0	12.7	48,085
8	Netherlands	0.944	82.3	18.5	12.4	57,707
10	Denmark	0.940	80.9	18.9	12.6	58,662

Source: Human Development Report Office. Created with data wrapper

sustaining that *Sanatan*, that is, eternal connect! Let us dive into *Bhakti Yog, Karma Yog, Gyan Yog* and *Raj Yog* and go through the Philosophy of Swami Vivekananda on all sorts of *Yoga!*

Dogs which provide us Vigilance and Security Round the Clock, Be it a German Shepherded, a German Hunter, be it all the battalions of Indian Street Dogs who are in command, awake and faithful round the clock in streets of India. Should not all of them have the rights to live full, meaningful, happy, healthy and devoted lives? The Cows in India are the family members of human families. They are emotional as well. The affection of cows and calves is remarkable. The donkeys, horses, camels have their own identities. The sheep and goats have their own identities, The Pigs have their own identity. Similarly, all the animals have distinct features. We need to have unconditional love for all the animals.

The honeybees, butterflies and bumblebees have their own identities. Do we know why the honeybees, butterflies and bumblebees are significantly depleting? It is because we have started treating them as resources rather than sources. Let us introspect how we have been treating the honeybees which provide us honey. We treat them brutally when the beehive is full of Honey. We detach the honey beehives from trees, squeeze, remove the entire honey and leave nothing for the honeybees to survive on during winters. These are deprived of home and honey both. Another is we Indians have entered into the era of ultra-modernization by blindly imitating others. Lights are on, both, outside and inside the multi-storied buildings. Very often through the open space, these, innocent, Honeybees enter these buildings, these innocent creatures strike against the glowing lamps recursively, do not find the ways out, try to go out of the window glass pans, climb and fall, fall and climb, but ultimately die! God has created all the entities for harmonious coexistence! Ultra-modernization may not be civilization!

All the trees, herbs and climbers have their indeterminate properties, characteristics, attributes and their values, India is well known originator and leader of *Aayurveda! Semal and Sadabhar* are known as Silent Doctors! Every cell of their being is used as medicine. *Kachnar, Amaltash, Poppy, Rose, Champa* and *Chameli, Peel* and *Nimboli, Peepal, Vad* and *Neem, Shatoot, Jamun* and *Beri, Anar* and *Banana, Tulsi, Adrak, Turmeric, Avanla, Adoosi,*

Aam and *Jamun, Amrood, Nashpati, Baggugosha, Til, Kalimirch, Lavang* all the entities have their own values. We should grow all these gracefully rather than destroying these mercilessly!

Now the sparrows are rarely seen! We are deprived of the chirping of sparrows! Every bird has its own identity, role and beauty! Our National Bird is Peacock). Dancing Peacocks, singing Koels, Peaceful Pigeons, *Veeragana Maina*, Innocent *Kastoors, Baaz* and Crows, Parrots and Woodpeckers all have their own identities and grace!

Roaring tigers and lions, running rabbits, elephants, playing squirrels, slithering snakes, buzzing flies, intelligent rats, visiting cats have their own identity and grace! Melting glaciers, roaring waterfalls, natural water springs, flowing, meeting and merging rivers, have their own ethos!

Universe Development Rights

We have Human Rights Declaration (Dec. 10, 1948), UNO Convention on the Rights of Children (Nov. 20, 1989), but how many countries globe over are observing and respecting these Rights? New Zealand provided Voting Right to women as elector first of all for the House of Representatives, many rights are observed and respected In Scandinavian Sweden, Denmark and Philippines! India is the first country globe which believes in the Universe Development Index (UDI) in its tradition and spirits; where the Rights of every entity are respected!

Animals, birds and other beings, entire nature, including human beings be treated as sources than resources! Originality and Innovativeness of every entity ought to be identified and respected. The rights of all beings on this planet be protected and that can be categorized as universe development rights.

Sustainable Development Index

Concept of Sustainable Development is not new for India. We have been adopting sustainable development practices since time immemorial. However, United Nations has come up with concept of Sustainable development in a formal way for the whole world, with a view to contain the damage already done to the earth and also to preserve and protect the environment from further degradation. The official definition of Sustainable Development was derived for the first time in 1987 in the Brundtland Report, also called 'Our Common

Future' published by the World Commission on Environment and Development (WCED). According to the Report, Sustainable Development is defined as the development that –meets the needs of the present without compromising the ability of future generations to meet their own needs. While warning on the negative environmental consequences of economic growth and globalisation, the Report also described how it could be achieved.

Subsequently in the year 2000, in a three-day Millennium Summit of world leaders held in New York at the headquarters of the United Nations, the UN General Assembly proclaimed the Millennium Declaration from where the millennium development goals originated**. The eight Millennium Development Goals (MDGs) mainly focused on reducing extreme poverty by 2015, among other things. On seeing the impact of MDGs which were targeted only till 2015, and also in view of urgent need to take care of the planet Earth, in June 2012, the United Nations Conference on Sustainable Development was held at (Rio+20) in Rio de Janeiro, Brazil where the Member States adopted the document The Future We Want' in which they decided, *inter alia,* to launch a process to develop a set of Sustainable Development Goals (SDGs) by upgrading the MDGs and to establish the UN High-level Political Forum on Sustainable Development. In January 2015, the General Assembly began the negotiation process on the post-2015 and in the UN Sustainable Development Summit held in May, 2015 it came out with 2030 Agenda for Sustainable Development with 17 SDGs at its core. The 17 goals of the new agenda of the UN are: Goal 1, end poverty in all its forms; Goal 2, End hunger, achieve food security and improved nutrition and promote sustainable agriculture; Goal 3. Ensure healthy lives and promote well-being for all at all ages; Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all; Goal 5. Achieve gender equality and empower all women and girls; Goal 6. Ensure availability and sustainable management of water and sanitation for all; Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all; Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation 'Goal 10. Reduce inequality within and among countries; Goal

11. Make cities and human settlements inclusive, safe, resilient and sustainable; Goal 12. Ensure sustainable consumption and production patterns; Goal 13. Take urgent action to combat climate change and its impacts; Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development; Goal 15. Protect, restore and promote sustainable use of terrestrial; ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss; Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels; Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development. Sustainable Development Solutions Network (SDSN) mobilizes scientific and technical expertise from academia, civil society, and the private sector to support practical problem solving for sustainable development at local, national, and global scales.

The Sustainable Development Goals (SDG) Index 2021

According to the 6th Edition of 'Sustainable Development Report 2021 (SDR 2021)' released by Sustainable Development Solutions Network (SDSN), India with a score of 60.1 has been placed at 120th rank out of 165 countries. Finland topped the Index followed by Sweden & Denmark. List of Top 10 countries with high SDG Index Rankings along with ranks of China, Pakistan and India are presented in Table -2.

For the first time since 2015, all countries have shown a reversal in progress in achieving Sustainable Development Goals (SDG) due to the COVID-19 pandemic. SDR 2021 has been written by a group of authors led by Professor Jeffrey Sachs, President of the SDSN and has been published by Cambridge University Press (Wikipedia).

Sustainable Development Practices in India

Ancient villages depict typical habitats in India where sustainable development practices used to be adopted religiously. The villages in India till recently, were places booming with people; trees, such as*, peepal, banyan, neem, sheesham, mulberry, tamarind, mango, guava, lisodha, peel, jamun, hibiscus, sadabahar, and many mor;,* and animals,

Table -2: Top Countries in the 2021 SDG Index Rankings

Ranking	Country	Score
1	Finland	85.9
2	Sweden	85.6
3	Denmark	84.9
4	Germany	82.5
5	Belgium	82.2
6	Austria	82.1
7	Norway	82.0
8	France	81.7
9	Slovenia	81.6
10	Estonia	81.6
57	China	72.1
120	**India**	**60.01**
129	Pakistan	57.7

such as, cows, buffaloes, goats, donkeys, horses, monkeys and a variety of birds like sparrows, crows, pigeons and parrots, etc. There were many a water resources, namely, wells, Persian Water Wheels, tube wells etc., around the community and in the fields. In front of every house there used to be *tulsi* (holy basil) plant and one or more than one hut for feeding the Cows and Buffaloes, where, the food such as, wheat fodder with *khal* and *binola* and/or *barsam* was served to them. Every morning Cow boys namely, would come take the cows of the entire community outside in the fields for grazing lush green grass. She/he would rear the cows very affectionately and then come back in the evening. Children used to play many physical and mental games during day, namely, *Beezo Bandari, Pitthu, Kayan Danda, Khokho, Kabaddi,* Hockey, Football and many more. In the evening people would milk the cows and buffaloes! Now, the villages are losing their identity and slowly the people are departing from sustainable development practices.

The primary schools were full of life. Primary Classes many a times were conducted under trees. Students used to learn schemas of alphabets writing on soil with finger tips or *slates*. Progressively, children learnt tables of numbers standing in a circle and voicing aloud. Children were made to memorize *Kayada*! Through which many values were inculcated in during Primary Education which helped them throughout life. Stanzas of the poems recited by teachers echo and re-echo. Similarly, math was taught in a unique way. As a result, children developed confidence, never diffidence. NEP (2020) aspires to revive this.

But now the old habitats are reformed. Old plants disappeared. New seeds were rarely sown. There were rare care takers of the seeds which were sown. Their germination, incubation, creation, sustainable growth and development were not properly taken care of. Most of the gardens have become deserted grounds. Many trees are cut down in the name of conversion of cities into Smart Cities! What are the indicators of Smartness? Multi Storied Magnanimous WIFI and HIFI buildings, Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR), and data clouding. Where is the actual reality?

Universe Development Index

How to work out the Development Index for every entity. There are various ways to develop the index. A model to work out the development index of an entity is given below with some examples:

A. Peepal Development Index= (Expected life of a Peepal* Return on investment from a Peepal) 1/2

B. Cow Development Index= (Expected Life of a Cow* Returns on investment from a cow)1/2

C. Honeybee Development Index= (Expected Life of a Honey Bee * Returns on investment from a Honey Bee)1/2

D. *Panch Ratan (Tulsi, Podina, Ginger, Haldi, Avanla)* Development Index= (Expected Life of Tulsi Plant* Return on investment from a Tulsi Plant) 1/2 + (Expected Life of *Podina Plant*Return on investment from a *Podina Plant*)1/2 +(Expected Life of Ginger Plant* Return on investment from a Ginger Plant)1/2 +(Expected Life of *Haldi Plant*Return on investment from a *Haldi Plant*) 1/2 + (Expected Life of an Anvala Plant* Return on investment from an Avanla Plant)1/2

E. River Yamuna Development Index =(Expected Life of Yamuna* Returns on investment from YAMUNA)1/2

F. Soup (Pomegranate* Pineapple* KIWI) Preparation Index can be computed the way we have computed the above mentioned indices!

Some Suggestions for Universe Development

i. Every entity in the universe has its own identity and function! Let us train the children to respect each and every entity!

ii. There should be healthy interrelation, interdependence and integration amongst all the biota and a-biota.

iii. We have our own priorities, but there should be due attention on Education at all levels. Maximum Possible GDP (5-6%) be invested on Education.

iv. The scenario of Research and Innovation in our country is not appealing. Research and Innovations need to be revived.

v. The apex bodies and statutory councils are not functioning as they ought to. There is rare response to the genuine queries even after repeated reminders. Their functioning should be reviewed.

vi. The UGC SAP Programs countrywide have become defunct, because, no grants are being released by the UGC! Similar is the Scenario of the ICSSR! They should be reviewed.

vii. Teacher Education should be given due importance. Education is being governed by bureaucratic, conservative, hierarchical, table to table, self-killing model still. Education ought to be governed by the Human Relations Model. Education should be duly respected because it is Education only which can help in restoring Peace and Sustainable Development.

Concluding

Jeevo Jivasaya Jivanam means that one living being is life for another living being. Every entity has the right to exist, but, *Srujan, Jeevan and Visarjan* (birth and death) are the evident realities! Living beings are constituted of five elements, *Pruthavi, Jal, Vaayu, Agni,and Aakash!* When a living being is conceived, life is infused. Our hunch is perhaps along with the conception! After due growth and development in the above mentioned five embodiments, the living beings appear. It is coming in. Then there is Life Journey. After that Exit! At the same time mass can neither be created nor destroyed. Then applies the Einstein's Equation, that is, $\partial E = \partial M* C^2$. Through this exit a lot of energy is released. So, these various wonderful forms are scattered in the form of energy, which is the capacity of doing work, and further converted into the Five Elements again. As per spiritual beliefs, *Aatmaor soul* gets salvation on the basis of *karma* or deeds done during life.

Bhutan is a country globe over which is highest on Happiness Index. Bhutanese people are not so materialistic. In Bhutan legacies are nurtured and dreams sustained with full determination and action. It is the state of peace, realizing which, we can know the entire universe and travel into the metaphysical realm by transcending time and space. let noble thoughts come from every entity! knowledge nurtures in, both, odds and evens.

India is a land which is known for its Culture of the Orient, Indus Valley Civilization, *Vasudhaiv Kutumbkam*, *munis and rishis, saints and seers*, farmers and teachers, doctors and engineers. India is a Nation known for all cultures- Agriculture, Horticulture, Sericulture, Digi-culture. We have Honey Bee Culture! Despite hills, valleys and plains we all are one, not only with Indians, but, with everyone. We understand the communication of all, as a whole. We know the languages of the birds, reptiles, insects, animals, rivers, waterfalls, lakes, and wells and tube wells. We Indians even without electronic WIFI and HIFI can connect with each other and share the states of each other through *thoughtrons!* We understand the languages of the celestial bodies, Sun, Moon and Stars. We can even understand the communication of Migrant Birds. We can understand all the regional languages of the Universe. We have abilities, capabilities, competency, proficiency and feelings for all the entities. We have Universal language connecting with all. Our *Shrimadbhagvadgeeta,* and *Shrimadbhagvatam* have educated us on how to realize the self, connecting with all! The *Sapta-Rishis* constitute our *Swastik*- a symbol of Peace and Prosperity!

With all ifs and buts, India sustains its Growth and Development through Eternal, that is, Sanatana approach with moto "Nit Nootan Chir Puratan!" Come what may we nurture our Legacies and Realize our Vision, by going together, by growing together, transcending the castes, creeds, regions and religion. Thus, *India should take lead to evolve the concept of Universe Development Index* which will enable the whole world not only to meet sustainable development goals but also to realise sustainable development actually and eternally.

Let us treat every entity affectionately, unconditionally, with all decency, decorum and discipline! Let us be one with all. We should revive our ancient culture and modernize and civilize with the present demands and futurological command to ensure sustainable development. ❏

Addressing Poverty and Hunger: The Third Mission of Higher Educational Institutions

Santosh Dhar* and Namrata Jain**

Elimination of poverty and hunger can strengthen the development of any country and hence, has been at the top on the agenda for policy makers. Be it the Millennium Development Goals (MDGs) adopted way back in the year September, 2000 or Sustainable Development Goals (SDGs) adopted in September 2015; poverty and hunger has always grabbed attention of international community. Eliminating extreme poverty and hunger was the first goal out of the eight MDGs initiated two decades ago and are again positioned as goal one and goal two respectively in SDGs that commenced seven years back. The reasons are obvious. Poverty and hunger create a vicious cycle as intertwined relationship exists between the two. Poor and vulnerable are devoid of nutritious and adequate servings of the food leading to malnutrition which in turn hampers the productivity level and that makes the underprivileged more susceptible to poverty.

Eradication of poverty is indispensable to the accomplishment of sustainable development goals. The goal is aimed attending extreme poverty in all its forms across the world. The focus is on reducing at least by half the proportion of men, women and children of all ages living in poverty, implementing social protection systems and ensuring universal access to resources. Zero hunger is equally important as no poverty. The four critical components of the zero hungerinclude putting an end to hunger, achieving food security, improving nutrition and promoting sustainable agriculture. However, attainment of both the goals is an arduous task.

The Global Scenario

Merely after 5 years of initiating SDGs, the entire world is stunned by disastrous effects of COVID-19. The pandemic has cost millions of lives. Apart from dearth of beds, vaccines, drugs, the human tragedy

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witnessed shortage of even cremation space. Social protection, health, livelihoods and education system collapsed across the world. As a result, poverty proliferated. The global Multidimensional Poverty Index (MPI) measures acute multidimensional poverty by measuring each person's deprivations in three equally weighted dimensions- health, education and standard of living across 10 indicators. The dimension of health comprises of two indicators-nutrition and child mortality; education also comprises of two indicators-years of schooling and school attendance. Standard of living comprises of four indicators-cooking fuel, sanitation, drinking water, electricity, housing and assets. In the global MPI, people are counted as multi-dimensionally poor if they are deprived in one-third or more of 10 indicators.

The values of MPI range from 0 to 1. Higher values indicate higher multidimensional poverty. Findings of the report revealed that there is an urgent need for corrective actions to be taken by policymakers throughout the world. According to the MPI report, 5.9 billion people who live across 109 countries more than 1.3 billion people live in multidimensional poverty and that half of global multi-dimensionally poor people are children.

Global Hunger Index (GHI) is a tool to assess the severity of hunger. The score of GHI is a reflection of the progress and setbacks in combating the hunger at global, regional and national level. Indicators that are considered while calculating GHI scores are undernourishment, child wasting, child stunting and child morality. The scores are measured on a 100-point scale wherein a score of zero (0) is termed as the best score indicating no hunger and score of 100 reflects worst. The scale ranges from low (score<=9.9) to extremely alarming (score>=50.0) and in between lies the scores for moderate (10.0 to 19.9), serious (20.0 to 34.9), alarming (35.0 to 49.9).

The GHI scores for Somalia revealed that hunger is at *extremely alarming* level whereas Central African Republic, Chad, Democratic Republic of the Congo, Madagascar and Yemen are at *alarming* levels of Hunger. Current projections based on the GHI scores revealed that the entire world and

particularly 47 countries will fail to achieve low hunger by the year 2030 (GHI, 2021). *The World Food Programme* warns that 41 million people are on the brink of famine. *The Global Report on Food Crises* 2021 presented a grim outlook and *The State of Food Security and Nutrition in the World* 2021 highlighted that undernourishment was increasing before COVID-19 and the pandemic has further aggravated the concerns. Three Cs--conflict, climate change and COVID are threatening as they are going to reverse the progress that has been achieved in recent years in the area of no poverty and zero hunger.

The Indian Scenario

According to Global MPI 2021, India ranks 66 out of 109 countries studied for analysis. GHI scores-2021 for all the countries could not be calculated due to insufficient data. Henceforth, the scores were calculated for only 116 countries. India with a score of 27.5 ranks at 101st out of these select countries. The scores revealed that the level of hunger in India is grave. In Indian context, the composite scores are calculated for each State/ Union Territory by aggregating their performance across the goals, by taking the arithmetic mean of individual goal scores. These composite score ranges from 0 to 100 wherein the score of 100 indicates that the particular State/ UT achieved 2030 the targets whereas, score of 0 indicates position at the bottom of the table.

SDG Index Score for Goal 1- No Poverty

The range of SDG Index Score for Goal 1 for 28 States lies between 32 and 86 whereas, the 8 Union Territories are comparatively better as the range is between 61 and 81.Depending upon the SDG Index Score, the States/UTs are categorised into four categories-Achiever (100); Front Runner (65-99); Performer (50-64) and Aspirant (0-49). Under this classification, top three States are Tamilnadu, Goa, Kerala and top three UTs Delhi, Ladakh and Chandigarh. These are placed in the category of Front Runner. However, six states namely Chattisgarh, Madhya Pradesh, Uttar Pradesh, Odisha, Jharkhand and Bihar with Index scores less than 50 and fall behind and are placed in the aspirant's category.

SDG Index Score for Goal 2- Zero Hunger

SDG Index score for Goal 2 ranges between 19 and 80 for States and for UTS the range is between 27 and 97. States of Kerala, Goa and Punjab are top three states and Chandigarh, Lakshadweep, Jammu and Kashmir are top three UTs in the category of

front runners. However, in terms of zero hunger there are 11 states-Gujarat, West Bengal, Maharashtra, Madhya Pradesh, Odisha, Assam, Uttar Pradesh, Chhatishgarh, Meghalaya, Bihar, Jharkhand and two Union Territories Andaman and Nicobar Islands and Dadra and Nagar Haveli & Daman and Diu are place in the category of Aspirants (NITI Aayog, 2021).

The Third Mission of HEIs

The 17 goals of SDGs are interconnected and interdependent in one way or other. However, one of the key agenda in SDGs that plays a pivotal role in attainment of other goals is Goal 17- Partnerships for the Goals. The goal aims to strengthen the multi-stakeholder partnerships to work together for the common good. Among these multi-stakeholders, the HEIs are rarely discussed in SDGs, despite the ability of HEIs to connect their agenda to real world sustainability issues through their *third mission* (Crow, 2010). There is no agreed single definition of *sustainable development,* similarly there is no clear definition for *third mission.* Yet, it is believed that third mission encompasses activities that are beyond the roles and responsibilities of teaching and research. *Third mission* has wider connotation that goes beyond imparting education and transferring knowledge. Martin (2012) described it as an extension and outreach activities in HEIs. Inman and Schuetze (2010) portrayed it as a sense of reciprocal community engagement and service to wide range of stakeholders in the area of HEIs.

Interactions amongst HEIs, Government and industry forms the core of *third mission* engagement activities. Etzowitz (2003) referred this as *triple helix of innovation* which indicates that the collaborative working of industry, government and academia can bring the innovative solutions. However, a fourth helix-civil society is added in the triad as innovation generation involves the social dimension (Caryannis and Campbell, 2010). Adding up of civil society or social dimensions reflect the significant role of third mission in offering sustainable solutions (Borkowska and Osborne, 2018).

Challenges and the Road Ahead

Li and Siddique (2020) reported that in Asian countries, over-reliance on few staple crops is the major contributor to low dietary diversity and persistent malnutrition. Keeping this in view, agricultural diversification is important that will make agri-food systems more sustainable. Promising

neglected and underutilized species (NUS) that are nutrient dense, climate resilient, economically viable and locally available need to be prioritized as Future Smart Food (FSF). Attainment of Zero Hunger necessitates consumption of FSF.

Understanding the burden of poverty and malnutrition and taking immediate corrective measures to break the vicious cycle is one of the most urgent needs to be addressed to for social and economic development. Out of the 17 SDGS, at least 12 goals comprise of indicators highly relevant to nutrition. Poverty and malnutrition both are the cause and consequences of each other (Siddiqui, 2020)and puts an end to the learning opportunity for the vulnerable. Circumstances push the economically weaker section in such a grim situation that they are not able to avail the opportunity of getting enrolled in an educational institution and for them thought of Higher Education remains a distant dream.

Higher Educational Institutions (HEIs) have acrucial role in creating human capital, knowledge and innovation through research (Chankseliani and McCowan, 2021).Hence, are key drivers for the achievement of sustainable development goals. Human capital plays a pivotal role in development as creation of knowledge and innovation is not possible without human capital. In the words of Vorster (2010), human capital is an integral asset of any country and its process begins from infancy and continues throughout the life. As the development of human capital begins from infancy, it is imperative to pay attention to the dietary needs of the child from the early stages of his or her life.

Addressing the concerns of poverty and hunger calls for innovative solutions to ensure the practices of sustainable agriculture, managing food waste and loss and access of nutritious food to all. The system requires integrated decision-making of local HEIs with other stakeholders. One-size does not fit all; any proposed solution should underpin the importance of needs of local community. Close working of local HEIs with local government, industries, and civil community could bring in novel solutions because they can better understand the issues and challenges of local communities. These local collaborations must contemplate to ensure that the solutions incorporate the local produce to acclaim the mantra of *vocal for local.* This game-changer mantra is needed so as to take India to development pathways of SDGs and to a bigger goal of making India "*Aatmanirbhar Bharat*" The Self-reliant India.

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Effects of Growing Population on Clean Water and Sanitation

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In search of development, societies across the globe have negatively impacted water related ecosystems. Increased water abstraction for growing urban populations was partly to blame as was the transformation of wetlands; lands saturated by water, such as marshes or river deltas into agricultural land. Water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes, are vital to providing social and economic benefits for people.

The declining condition of the ecosystems directly impacts water availability as well as other essential services such as biodiversity, food production and flood control. Approximately 40 percent of the Earth's land surface is now being used for food production. (Source: www.fao.org).

All governments, world bodies like the UN and development financial institutions are pursuing policies to improve food security and support human development. However, it is well worth being cautioned that unrestrained and unplanned farming in particular is also associated with a wide range of negative environmental impacts. These can include increased emissions of greenhouse gases and ammonia; depletion of freshwater and increased soil compaction, depletion and erosion. Not to forget eutrophication, in which a water body becomes overly enriched with nutrients, leading to excessive growth of algae which produce toxins that are harmful to higher forms of life. This can cause problems along the food chain and affect any animal that feeds on them.

`In India, agriculture is recognized as the leading contributor to biodiversity loss, which principally occurs through the conversion of natural habitats to farmed systems. there is a vital necessity to protect and restore water-related ecosystems so as to promote biodiversity and sustainability, which could potentially be achieved through a combined effort of governing bodies, Environmental Policies and local inhabitants of the regions that will lead to a cost-effective, efficient, and sustainable way to conservation, management and restoration of the water related systems.

The concept of Integrated Water Resources Management (IWRM) emerged around the 1980s in response to increasing pressures on water resources from competition amongst various users for a limited resource, the recognition of ecosystem requirements, pollution and the risk of declining water availability due to climate change. India has not yet reached the level of Water Resources Development as has already been achieved by many developed countries; therefore, there is a need for India to undertake developmental measures along with management measures.

A central goal of IWRM at the river basin level is to achieve water security for all purposes, as well as manage risks while responding to, and mitigating disasters. Since the 1990s, the integrated water resources management (IWRM) approach has become a globally accepted framework for sustainable water resources management. A widely used definition of IWRM is that of the Global Water Partnership (GWP), that describes IWRM as management of water resources in a sustainable and balanced way, taking account of social, economic and environmental interests.

Any nation cannot develop without adequate water resources including irrigation water, Hydropower and water for commercial and industrial activity. Distribution of water among different parts of country has been a matter of legislative disputes. Despite of Water Disputes Act, 1956 and Narmada water disputes tribunal (October, 1969), water usage of Narmada River flowing between Madhya Pradesh and Gujrat states in India has been a matter of dispute for more than 2 decades under

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the legislation of one nation. On a global scenario, there is need of worldwide organizations and legislation for implement integrated water resources management at through transboundary cooperation and coordination.

One of the Examples of the international water treaty is the Indus Waters Treaty between India and Pakistan, brokered by the World Bank, to use the water available in the Indus River and its tributaries on 19 September, 1960. It has also been under disputes and disagreements, that later, have been settled via legal procedures, provided for within the framework of the treaty. Despite of the relations between two nations, The Indus Waters Treaty is considered one of the most successful water sharing endeavors in the world today, even though analysts acknowledge the need to update certain technical specifications and expand the scope of the agreement to address climate change.

If all Nations put together their efforts to solve the water crisis issue regardless of the political disputes and economic benefits, implementation of integrated water resources management at all levels, including through transboundary cooperation is possible.

Although sufficient amount of water is available on the earth, its spatial distribution and quality indices hinder the use of water. So, the water quality improvement is essential for the sustainable use of available water resource. The First step to improve the quality of water is the reduction in the pollution sources responsible for the quality deterioration of water bodies. The Wastewater generation rate (Globally) is increasing aggressively because of rapid growth of population, industrialization, and urbanization.

As per the data of UN water, only 27% of domestic wastewater in India is safely treated. The remaining huge amount of wastewater ultimately find its way into any surface or ground water body resulting in its pollution. More than 80 per cent of wastewater resulting from human activities is discharged into rivers or sea without any pollution removal, threatening human health, ecosystems, biodiversity, food security and the sustainability of water resources.

As per the experience it has been observed that improvement in the quality of water occurs primarily because of investment and policies to reduce sources of pollution like industrial effluents, municipal wastewater discharges and runoff from agriculture, policies that attract clean and energy efficient industries have the potential to improve environmental quality while also enhancing economic growth (Sapkota and Bastola, 2017).

Effective treatment of wastewater is also a key factor for improving water quality. Wastewater treatment is the process of removing suspended and dissolved physical, chemical, and biological contaminants to produce water that is safe to be discharged to the environment or suitable for reuse and a solid sludge suitable for disposal or reuse (e.g. as fertilizer). Using advanced technology, it is now possible to re-use water after treatment for agricultural purposes, industry, or even as drinking water.

However, there are many barriers to implementing sustainable solutions for treatment of municipal wastewater in developing countries. Experience has shown that conventional approaches to planning, designing and operating these systems have a high failure rate (Massoud et al., 2010; IWA, 2006). Sewage collection accounts for over 60% of the budget for wastewater management in a centralised system (Massoud et al., 2009). Decentralised or "cluster" systems where wastewater is collected from a small number of households may be a more appropriate and affordable treatment option.

Currently, the use of untreated wastewater for irrigation provides critical economic and social benefits to poor communities, but this often comes at the expense of unacceptable health and environmental risks (Grangier et al., 2012; Lam et al., 2015; Qadir and Mwachiro, 2017). Globally, approximately 36 million hectares are estimated to be irrigated with urban wastewater, and of these croplands, approximately 29 million hectares are located in countries with inadequate wastewater treatment (Thebo et al., 2017). Therefore, millions of people in low income countries are exposed to long-term health risks.

Solutions for wastewater treatment in developing countries could include using natural wetlands for "assimilation" of sewage (Scholtz, 2015) or in some cases, using constructed wetlands (Kivaisi, 2001). This approach is consistent with the recent concept of "Nature-Based Solutions" (NBS), which refers to actions to alter or restore

local ecosystems and landscapes to address water management problems (Nesshöver et al, 2017).

Now it is not wrong to say after the three basic needs (food, shelter & clothes) the universally accepted needs are clean water and sanitation which is essential for healthy and happy life. Substantial growth has been made in increasing access to clean drinking water and sanitation worldwide but still billions of people mostly in rural areas still lack in these services.

According to the data available worldwide:

- One in three people do not have easy access to safe drinking water.
- More than 673 million people still practice open defecation. *(un.org)*

In the time of COVID like pandemics the above data is very alarming and whole world need to take faster steps to provide an easy and safe access to clean drinking water and sanitation.

To achieve the above-mentioned goal of safe and clean drinking water, Indian Government has already announced the '*Har Ghar Jal*' yojana under '*Jal Jeevan Mission*' which target to provide safe and adequate tap drinking water in all the households of India by 2024. It also targets to improve the life of women by freeing them from the age-old drudgery of fetching water from large distances carrying heavy loads (jaljeevan mission. gov.in*)*

Indian government also has completed its mission to make India *open defecation free* through making around 10 crores of toilets under '*Swachh Bharat Mission*' for benefiting around 500 million people across 6,30,000 villages, by 2nd October, 2019 (150th Birth anniversary of Mahatma Gandhi).

Both the above-mentioned schemes '*Har Ghar Jal*' yojana as well as *Open Defecation Free* under *Swachh Bharat Abhiyan* are helping India to achieve goal no 6 of sustainable development goals. But only making schemes is not sufficient to sustain these goals for long time till every individual will not have the awareness for clean water and sanitation. So to increase the awareness as well as to create expert and technical graduates, the role of higher Education Institutions is highly important.

Higher education institutions are themselves helping the world to achieve many sustainable development goals like equity in higher education (SDG--4), poverty (SDG--1), gender equity (SDG--5), decent work and economic growth (SDG--8) and many more. But higher education Institutions can also help strongly in achieving SDG-6 *(clean water and sanitation)*.

- By implementing sustainable campus practices for clean drinking water and sanitation.

- By spreading the awareness among students by various activities related to importance of clean water and sanitation.

- By incorporating very small part related to clean drinking water and sanitation in the curriculum of students.

- By finding 'the villages near by institutions mostly affecting from water diseases and sanitation lacking' and spreading the awareness between them.

- By making compulsory for every institution to form a *sustainable development center* to carry out various activities as well as student competitions related to importance of clean water and sanitation inside and outside the campus.

Hence, higher education institutions can play a strong role in achieving clean drinking water and sanitation for all. Governments are doing many works for taking these essential services to every individual, but higher education institutions can help them in increasing the efficiencies of their schemes and as their think tank to achieve this goal very soon. ❐

Revitalizing Agricultural Research in Uttar Pradesh for Enhancing Farmers' Income#

Rajvir Singh Rathore*

Uttar Pradesh is a most populous state of the country and 59 per cent of its work force is engaged in agriculture sector. UP is the highest producer of food grains, vegetables, potatoes, sugarcane and milk in the country. Due to the significant contribution, agriculture is also called the backbone of economy of Uttar Pradesh. The State has 75 districts, 327 tehsils, 822 blocks and 107452 revenue villages, which are divided into 4 economic zones namely. Western (30 districts), Eastern (28 districts), Central (10 districts) and Bumdelkhand (7 districts). Whereas on Agro-climatic basis, UP is divided into 9 Agro-climatic Regions viz; 1. Tarai Region, 2. Western Plain Region, 3. Central Western Region, 4. South Western Region, 5. Central Plain Region, 6. Bundelkhand Region, 7. North Eastern Plain Region, 8. Eastern Plain Region and 9 Vindhyachal Region.

Research Network in Uttar Pradesh for Agriculture and Allied Fields

Presently, technological solutions for the various problems faced by farmers are being provided by 5 State Agricultural Universities, 1 Central Agricultural University, Agricultural Institutes of 3 Central Universities, 14 ICAR Institutes, 5 CSIR Institutes and 1 Veterinary University working in the State. As far extension of new technologies is concerned, the efforts of line departments namely; Agriculture, Horticulture, Animal Husbandry, Fisheries, and sericulture are also being supplemented by the 82 Krishi Vigyan Kendra (KVKs) established under the administrative control State Agricultural Universities, ICAR Institutions and NGOs.

Like any other research organisations in the country, the focus of agricultural research organisations has also been more on quantitative attainments in order to bring out more number of publications for career advancement, but not as much in quality. As a result, a large number of issues related to agriculture still need to be addressed in an holistic manner. It is also required to make the farming a viable venture and attract the rural youth towards agriculture as

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they are losing the interest in agricultural activities and migrating from villages to cities in search of employment.

At national level, Indian Council of Agricultural Research (ICAR) undertakes and sponsors Research and Development activities for production and processing of different agricultural commodities. The ICAR has been supporting All India Coordinated Research Projects on various crops and themes of national importance including the short term, result oriented projects. Under the World Bank supported Training & Visit (T & V) Programme, National Agricultural Research Project (NARP) was launched and 18 NARP centres/ Zonal Research Stations were established under State Agricultural Universities for developing area specific technologies suitable to the local agro-climatic conditions. Intensive Extensive Research Project (IERP) and Operational Research Project (ORP) were actively involved and supporting in the transfer of technologies from Research Stations (lab) to farmers field. However, due to lack of financial support after the project period, these University managed NARP centres have become almost defunct. Therefore, sincere efforts are needed to strengthen and revive the existing NARP Research Centres for finding out the solutions of problems being faced by farmers under changing climatic conditions and deteriorating natural resource base.

Uttar Pradesh Council of Agricultural Research (UPCAR),established by the State Government as a Technical Advisory Body in the Year 1989 for policy planning, priority setting, coordinate of agricultural education and research in the state is facilitating and funding area specific need based research projects from its limited financial resources as it did not receive regular fund from the government.

Funding System and Projects Supported by UPCAR

UPCAR identifies research priorities in collaboration with State Agricultural Universities, Scientists of ICAR Institutions, CSIR organisations and line department officials. Research proposals are invited through wider publicity and funded in competitive mode following well set peer reviewing

system. Since its inception, Council has supported total 464 research projects executed by 50 Organisations. The number of projects implemented by the different organisations qualified under competitive mode are shown through Fig. 1.

Fig. 1 Research Projects implemented by different Organisations
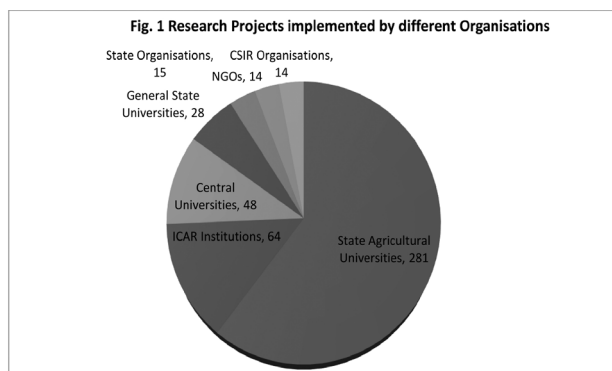
UPCAR funded these projects from its two corpus funds namely; Shodh Nidhi and Revolving Funds created at Council with the financial support from Uttar Pradesh Mandi Board; the World Bank assisted programmes namely; Uttar Pradesh Sodic Land reclamation Project (UPSLRP) and Uttar Pradesh Diversification Agriculture Support Project (UPDASP); State Horticulture Mission; National Food Security Mission; XI Five Year Plan Budget and Rashtriya Krishi Vikas Yojana (RKVY). However in RKVY, UPCAR was involved mainly for the technical purposes i.e. Appraisal and Monitoring of projects and budget under this scheme were released directly by Agriculture Department to the project implementing agencies.

All major areas related to agriculture sector such as crop production, crop protection, livestock, fisheries, dairy, home sciences, extension services etc, were covered. The share of various fields provided financial assistance have been shown through Fig.2.

Fig. 2 Share of different subjects/ disciplines in projects funded by UPCAR
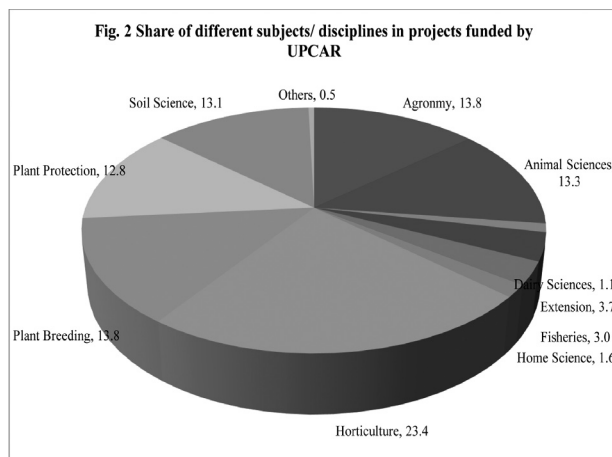
Transforming Agriculture for Enhancing Farmers Income

Under the national level programme named as Sankalpse-Siddhi aimed for doubling farmer's income by the year 2022, various initiatives are being taken up for application of farm technologies in farmers field. Besides, taking up technology assessment & refinement and capacity building activities, the other initiatives namely; Farmers FIRST, Attracting and Retaining Youth in Agriculture (ARYA), Climate Resilient Integrated Farming Systems (IFS), Cluster Frontline Demonstration (CFLD), Pulses Seed Hubs, Mera Gaon Mera Gaurav and awareness creations about mega government schemes are also being implemented to support the farming community through application of new technologies and various innovations. Region specific farming system models encompassing different components like field crops, horticultural crops, livestock, fishery, poultry, vermicompost, mushroom production, apiculture, sericulture to make farming venture economically viable is being taken up in a systemic manner.

It has been proven through researches conducted by various research institutions that cost of cultivation can be reduced substantially by adopting improved technologies i.e. precision farming, climate smart agricultural practices, use of improved varieties etc. Further, it is evident from the data that farmers income may be enhanced substantially by diversification of existing cropping systems and adoption of Integrated Farming Systems (IFS) approach. As IFS approach has higher employability opportunities, hence, will also be helpful in arresting the rural migration. The benefits of crop diversification and adoption of IFS approach in different situations of Uttar Pradesh have been given in Table 1 and Table 2.

State Initiatives to Rejuvenate Research institutions for Enhancing Farmers Income

In order to demonstrate innovations and advance technologies on farmers field to enhance their income, UPCAR in collaboration with State Agricultural Universities, ICAR institutions in partnership of International organisations namely; International Maize and Wheat Improvement Centre, known by its Spanish acronym, CIMMYT, International Crops Research Institute for the Semi-Arid Tropics (ACRISAT), International Rice Research Institute (IRRI) has taken up a major on-farm programme. The activities under project are being focused on Intensification, Crop

Table-1: Diversification of existing cropping systems for higher economic returns

Cropping systems	Annual Productivity (t/ha)	Net return (Rs/ha)
Kanpur		
Rice-Wheat-Fallow (Existing)	9.51	72352
Maize-Garlic-Green gram	26.25	283167
Maize+Black gram-Potato-Onion	21.58	252041
Rice-Wheat-Green gram	16.95	157809
Ayodhya (Faizabad)		
Rice-Wheat-Fallow (Existing)	8.81	84935
Rice-Potato-Green gram	16.81	309408
Rice-Cauliflower (Hybrid)-Cowpea (vegetable)	20.25	226931

Source: Dr N. Subash (2019). ICAR- Indian institute of Farming Systems research, Meerut.

Table-2: Integrated Farming System approach for Higher Employability

Zone	Improved IFS Model	Existing (man days/ha)	Improved IFS Model (man days/ha)	Additional employment due to IFS approach
Central Plain	Cropping system + Dairy + Orchard + Vermicompost + Kitchen garden + Boundary plantation	314	422	108
Eastern Plain	Cropping system + Dairy + Orchard + Fisheries + Vermicompost + Kitchen garden + Boundary plantation	260	500	240
	Cropping system + Dairy + Orchard + Fisheries + Poultry + Goat + Apiary + Vermicompost + Kitchen garden + Boundary plantation	300	710	410
Western Plain	Cropping system + Dairy + Orchard + Mushroom + Kitchen garden + Boundary plantation	215	356	141

Source: Dr N. Subash (2019). ICAR- Indian institute of Farming Systems research, Meerut.

Diversification, and Integrated Farming System (IFS). Three districts from each agro-climatic zone have been identified to establish a cluster of about 300-350 hectare on each theme i.e. Intensification, diversification and IFS respectively. The details of Implementing/ Lead Centres, districts selected under different Agroclimatic Zones for identified interventions are given in Table 3.

Table-3: Zone wise districts selected for different interventions and Organisations identified for their Implementation

Agro-climatic Zone	District	Technological Intervention	Implementing Organisation	Potential Partners
1.Western Zone	1. Meerut	Integrated Farming System Models	Indian Institute of Farming Systems Research, Meerut	SVPUAT, Meerut, CIMMYT, IRRI
	2. Muzaffarnagar	Intensification of sugarcane	SVPUAT, Meerut	IARI, IIS, Bhopal IGFRI, Jhansi
	3. Bulandshahar	Crop Diversification	IARI, New Delhi	SVPUAT, Meerut, IGFRI, Jhansi, IRRI

Agro-climatic Zone	District	Technological Intervention	Implementing Organisation	Potential Partners
2.Mid-Western Plain Zone	1. Amroha	Intensification of Wheat	CIMMYT	CSAUAT, Kanpur, SVPUAT, Meerut, IIPR
	2. Badaun	Integrated Farming System Models	SVPUAT, Meerut,	CSAUAT, Kanpur, NBFGR, IIPR
	3. Sahajahanpur	Diversification under sugarcane system	UPCSR, Sahajahanpur	IISR, Lucknow, IIPR, Kanpur, CSAUAT
3.South-Western Semi-Arid Zone	1. Mathura	IFS Modules	DUVASU, Mathura	CSAUAT, SVPUAT, CIRG,
	2. Agra	Diversification under millet/oilseed/wheat based cropping system	CIRG, Mathura	ICRISAT, IIPR, CSAUAT
	3. Etah	Intensification of Maize and Wheat	CSAUAT, Kanpur	IIPR, ICRISAT, CIMMYT
4. Tarai Zone	1. Lakhimpur Khiri	IFS Modules	IISR, Lucknow	CSAUAT, IIVR, CSSRI
	2. Bahraich	Intensification of Rice, Maize and Wheat	ANDUAT, Ayodhya	IISR, CISH, IIVR
	3. Saharanpur	IFS Modules	SVPUAT, Meerut	CISH, CPRI, IARI
5.Central Plain Zone	1. Fatehpur	Intensification of Pulses and Cereal Crops	IIPR, Kanpur	CSAUAT, Kanpur, CIRG, IVRI
	2. Kanpur Dehat	Diversification of Potato/Wheat/Oilseed/ Maize/Vegetable	CSAUAT, Kanpur	CIRG, IIPR, ICRISAT
	3. Hardoi	IFS Modules	CSSRI, Lucknow	CSAUAT, IIFSR, IVRI
	4. Sitapur	Crop Diversification	CISH, Lucknow	CSAUAT, ICRRISAT, CIMMYT
6. Eastern Plain Zone	1. Ayodhya	Intensification of Rice/ Wheat and Vegetables	ANDUAT, Ayhodhya	BHU, IIVR, CISH, CSSRI
	2. Chandauli	IFS Modules	BHU, Varanasi	ANDUAT, SHUATS, IVRI, NBAIM
	3. Mau	Diversification of Rice-Wheat cropping system	ANDUAT, Ayodhya	BHU, Varanasi, IVRI, NBAIM, IISR
7. North-Eastern Plain Zone	1. Siddharthnagar	Intensification of Rice Wheat System	IRRI, India	ANDUAT, BHU, IISR
	2. Deoria	Diversification of Wheat/Rice /Pulses	ANDUAT, Ayodhya	IIVR, NBAIM, IISR
	3. Gorakhpur	IFS Modules	ANDUAT, Ayodhya	IIVR, CISH, NBAIM, IIFSR, IRRI
8. Vindhyan Zone	1. Prayagraj	Intensification of Rice-Wheat/ Vegetable-Fruit crops	SHUATS, Prayagraj	BHU, IIVR, CISH, ICCRISAT
	2. Sonbhadra	IFS Modules	IIPR, Kanpur	ANDUAT, BHU, SHUATS, ICCRISAT
	3. Mirzapur	Diversification of Rice-Wheat system	IIVR, Varanasi	ANDUAT, SHUATS, BHU, CIRG
9. Bundelkhand Zone	1. Jhansi	IFS Modules	IGFRI, Jhansi	BUAT, Banda, ICCRISAT, IIFSR

In beginning using Participatory rural Appraisal (PRA) technique, various constraints related to production, processing and marketing are being analysed by the Lead centres In each cluster a Innovation Centre is proposed to be setup to facilitate and ensure input supply and establish better linkages with line departments for better convergence/dovetailing with on-going programmes. Farmer's Producer Groups will be formed to ensure remunerative returns of their products by selling them either in domestic market or in international.

In addition to the above activities, State Government has also made the provisions to establish commodity based "Centre of Excellence" at two Krishi Vigyan Kendra's (KVKs) in each agro-climatic zones. In total, 18 Centre of Excellence are being established in the state. The centres in Tarai zone will focus on organic basmati rice, apiculture and mushroom production; whereas, centres of western plain zone will concentrate their activities more on floriculture and sugarcane. Similarly, Centre of Mid-western Plain zone will take up poultry production, processing, poultry feed and value addition in maize. As Oil seed crops, millets and potato are the major crops of this region, the focus of Excellence centres will be more on processing and value addition in potato, groundnut and apiculture. The centres of mid plain and eastern plain zone are aimed to diversify rice-wheat based cropping system by introducing vegetables, flowers and fruit crops. Whereas, Bundelkhand and Vindhyan zone being dry areas will focus on pulses and fruit crops suitable to semi arid conditions. Considering the availability of water resources in abundance, the aim is to promote fisheries. It is strongly believed that planned interventions will not only increase the production of various commodities but also improve economic condition of farming community due to processing, value addition and better prices of their products.

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Muskurayega India: An Initiative for Mental Health and Psycho Social Support

Anshumali Sharma*, Rashmi Soni** and Prakash Chaudhary***

Out of the blue from nowhere an epidemic broke open in front of the entire world like a nightmare. In January 2020 the World Health Organization (WHO) declared the outbreak of a new coronavirus disease to be a Public Health Emergency of International Concern. Subsequently, Corona Virus Disease-19 (COVID-19) was declared as a Pandemic in March 2020, rapidly spreading over most of the countries in the world. As when it just started till 18th June 2020, a total of 8.3 million cases were confirmed in more than 227 countries with 0.4 million deaths.

COVID-19 has posed special challenges that were never seen before, including novelty of the infectious agent, rapid spread due to faster routes of travel and uncertainty about its containment. Most of the pandemic mitigation response worldwide is based on tertiary levels of prevention and include effective and faster screening, diagnosis and treatment of the active cases. However, with the sudden surge in cases of COVID-19 in India, from sometime in mid-February 16,3248 active cases as of 19th June, it is apparent that trained human resources is succeeding the actual requirement today.

The pandemic has also called upon preventive measures to stop its spread and to reduce the number of new cases being added daily. Governments of various nations called nationwide lockdown in respective countries. Along with declaring nationwide lockdown, as preventive measures in public domain, individual preventive measures are also advocated widely, including hand hygiene, respiratory hygiene, use of masks and social distancing. Measures like lockdowns, though applied inevitably, on the other hand had wide impact on social, economic and cultural wellbeing of the people at large.

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Spanning across all these present and future consequences of COVID-19, mental health and wellbeing of most individuals is invariably at stake. Prior experiences with such outbreaks, epidemics and pandemics suggest that such crises lead to longer lasting psychological consequences. Individuals that have faced or witnessed any crisis/disasters tend to experience symptoms of major depressive disorder (MDD), post-traumatic stress disorder (*PTSD*), and even suicidal ideations. The unique feature in a pandemic, as against to other disasters, is that of time lapse and opportunity of disease modeling, planning and preparation as the pandemic progresses. In addition to this, India in COVID-19 times is facing specific demographical, economic, social-cultural and climatic issues.

COVID-19 and Mental Health in India

The already in coming literature on mental health in India during COVID-19 reports that more than 80% of the participants are preoccupied with the thought of the disease, 72% are worried about themselves and their significant others and 80% population have Corona as a part of their usual discussions.

India, just as the rest of the world is facing a parallel 'infodemic' that is adding to the fear and misconceptions. In their book 'Psychiatry of Pandemics', Khan S. and Damir H., has rightly said "*Just as physical disease has its pathogens, vectors, and modes of transmission, thus overpowering the host, so the public, psychological aspects of the outbreak have kernels of misinformation, feed on uncertainty, grow in doubt as they incubate in our brains and then, through vectors of media and communication, explode in form of individual or mass panic, threatening to overpower the coping resources of an individual or an entire community.*"

Social isolation, quarantine and lockdown is challenging the basic human nature of sociality, creating loneliness, depressive states and anxiety. Those with pre-existing mental disorders (prevalence in India as high as 13.7%) are worsening as distancing from society is exactly in contrast to mental health promotion and illness interventions.

Mental health is unique product of biological, psychological, social, economic and political factors. While stability in all of these domains is compromised today, the Inter-Agency Standing Committee (IASC) of United Nations for humanitarian assistance recommends that Mental Health and Psycho-social Support (MHPSS) should be a core component of any public health response. In India, we are additionally challenged by grossly limited mental health workforce (7000; actual requirement 54750). Given that, it is also important to note that demographically, India is a 'young' country with a majority of population falling in young adulthood and a productive age group. The socio-economic implications of COVID-19 are going to take a hard toll on mental health of this young majority. Hence it is now important that mental health issues are addressed by enhancing competencies of non-specialist health workers or lay counsellors, thus focusing on one of the principles of MHPSS (Mental Health and Psycho-social Support) of building on existing resources and capacities.

From various sources, globally and nationally, it has been restated time and again that mental health of the population should be a prime area of attention and intervention. The same was also reinforced by Prof. Rajnish Jain, Secretary, University Grants Commission, Ministry of Human Resource and Development, Government of India. He issued an advisory (ref) on 5th April 2020, to appraise the issues of mental health, wellbeing and psycho-social support to students by setting up helplines and regular mentoring.

Muskurayega India Intitaive

National Service Scheme (NSS), a volunteer organization of the students is an Indian government-sponsored public service program conducted by the Ministry of Youth Affairs and Sports of the Government of India. Popularly known as NSS, the scheme was launched in Gandhiji's birth centenary year, 1969. It has been functioning pan India to motivate and integrate students with community on various social issues. The Education Commission headed by Dr. D.S. Kothari (1964-66) recommended that students at all stages of education should be associated with some form of social service. This was taken into account by the State Education Ministers during their conference in April 1967 and they recommended that at the university stage, students could be permitted to join the National Cadet Corps (NCC) which was already in existence on a voluntary basis and an alternative

to this could be offered to them in the form of a new programme called the National Service Scheme (NSS). Promising sportsmen, however, should be exempted from both and allowed to join another scheme called the National Sports Organization (NSO), in view of the need to give priority to the development of sports and athletics. The main objectives of NSS are to understand the community, identify the needs and problems of the community, develop among themselves a sense of social and civic responsibility, develop competence required for group living and sharing of responsibilities, acquire leadership qualities and democratic attitudes etc.

National Service Scheme (NSS) Uttar Pradesh has a network of 307,600 of youth volunteers, 3076 Program Officers, 75 District Nodal Officers and 24 Program Coordinators at 36 State and Private Universities. COVID-19 has posed unimaginable challenges on human health both mental and physical. In the face of COVID-19, when the country is struggling for containment of its spread, prevention and treatment of such cases, National Service Scheme, Uttar Pradesh, quickly responded to urgent necessity of addressing COVID-19 related issues and organized various campaigns. Hence, re-aligning the contemporary issues faced by the community, NSS-UP in partnership with UNICEF Uttar Pradesh and Public Health Foundation of India (PHFI) launched '*Muskurayega India*' initiative. It is an initiative to bring smiles, by offering tele-counselling to the students and general public for prevention and management of mental health issues during COVID-19 and after.

Under this intervention, 331 Mental Health Counselors—qualified teachers from various universities—are providing counseling services. Capacity building of MI counsellors has been one of the main strategies to build up a team competent to conduct simple psycho-social counselling as a first aid, with the callers in mental distress. Since the inception till June 2021, 25 educational training sessions on mental health have been conducted. The important aspects covered under the training programme were basic knowledge about mental health and mental illness, vulnerable population like senior citizens, migrant workers and children and youth including issues like suicide prevention, addiction, depression, anxiety, women empowerment and nutrition in relation to COVID-19.

Further, to facilitate reporting system of the calls received, a mobile based application, "NSS-UP" was launched. Networks of 331 counsellors (MI counsellors) which are faculty members of humanities across various universities of Uttar Pradesh are volunteering for telephonic mental health counselling, providing counseling support to the callers. Over the period of 13 months (from May 2020 to June 2021), 2722 unique callers were registered on NSS-UP App. A total of 3107 calls were made which also included several follow up calls. Majority of the callers were males (54%), of age group 19-25 years (37%), completed graduation (45%), were unmarried (49%) and belonged to urban areas (52%).

Half of the callers were graduate males from urban areas and one-third belonged to the age group 19-25 years. The most common problem reported by callers were education related (37%), followed by psychological issues, financial issues, employment issues, food/ration related, family/relationship issue and unlawful activities. Almost two-thirds of the problems reported were new problems that emerged during COVID-19. The counselors extended psychological counseling to more than 50 percent callers, followed by advising practical steps like exercise or diet. Of the total follow ups by counsellors and callers, two-third of the cases were reported to be resolved.

The MI counsellors' contact numbers were publicized in local newspapers and on social media, individually and in groups, to raise awareness about the counselling being offered. On May 22nd 2021, IVRS (Interactive Voice Response System)-6390905002 was launched to ease the caller and counselor tele-calling experience and improve the frequency of calls. The prior registered counsellors continue to enter the data in 'NSS UP' mobile application and the numbers of call registered is 3107.

To sustain the motivation of MI counselors, five 'counsellors of the month' are declared every month and digitally felicitated using various criteria for quality assessment of outputs.

Muskurayega India Initiative is a brain child of the visionary Anshumali Sharma who is the main coordinator and the co-coordinator of MI, Dr. Prakash Chaudhary have done commendable job to bring this initiative to such great heights in such a short period of time. The core team of Muskurayega India includes experts from Psychology background who have been providing training meticulously to our Programme Officers on Mental Health and issues. These experts are Dr. Nilam Behere who is MD, Psychiatry and is from Public Health Foundation of India (PHFI), a Central Organization working on Public Health issues. Dr. Nilam by her insurmountable and exhaustive knowledge and expertise has been continuously helping our counselors to understand the difficult psychological concepts with ease and simplicity. Dr. Rashmi Soni, a practicing Counselling Psychologist has 20 years of teaching and practicing experience. She is an NLP and Emotional Intelligence Practitioner and Trainer in Life Skills. The third expert is Dr. Manini Srivastava, a faculty in Psychology Department of University of Lucknow and is a practicing Psychologist. Dr. Sonal Kumar from USA who is a doctorate from IIT Kanpur has also been providing her expert inputs from time to time on important psychological issues to our Mental Health Counsellors. The MI team also has some very diligent technical experts, Dr. Diksha Singhal from PHFI who has been handling every technical aspect of the whole initiative.

The NSS-MI initiative thus has been built to meet community need in a culturally accepted and resource effective way and successfully demonstrates efficacy of multi-sectoral collaboration to meet pandemic challenges. The *Muskurayega India* initiative, offering Mental Health counseling in all 75 districts of Uttar Pradesh, administratively, stands by its name as NSS counselors have received calls from many parts of India in just a short span. The mental health promotional and interventional activities in Uttar Pradesh through NSS Mental health counsellors, aspires to be the first and one of its kinds in India- a large-scale mental health initiative.

It was felt by the counselors as a truly enlightening experience to counsel/ to help and to assist people in their difficult times. The students as well as other sections of the society were benefitted with this initiative. Some of the counsellors received calls from very far places and some have helped migrant workers a lot. Not just few minutes, some of the counsellors devoted hours to listen to callers and their problems. The variety of issues, almost covering all human activities were covered in the calls, and the credit goes to the interactive, well designed training sessions that all Programme Officers could address the callers effectively. The Mental Health Counsellors themselves got acquainted with basic coping

techniques and learned to help caller in solving his/her specific problem in his/her environment.

The Mental Health problems are in general, mostly neglected in our society until they claim heavy toll on individual, family and largely on society. The times we are facing with is not usual. As COVID-19 pandemic trickles down to each and every domain of human life, *Muskurayega India*, envisioned to address mental health issues of people in most need based, resource effective way. With a motivated group of counsellors, undergoing capacity building by continued engagement in training sessions and more effective ways of capturing and monitoring data using mobile application, we navigated through the primary steps. In this journey forward, we foresee that with changes in overall dynamics of the pandemic, the needs of community may change; the scope and outreach of services may need widening. Motivation of the service providers needs to be sustained and knowledge to be enriched and more inter-sectoral collaborations to create referral channels and partnerships may be required.

With all this prospective in sight, regular review of the initiative is discussed in joint meetings of NSS UP, UNICEF and PHFI team. Respecting caller's privacy, various aspects of problems expressed by callers, reported by the mental health counselors are analyzed by the mental health professionals, so that the initiative may be monitored, developed and could be made more fruitful for the wellbeing of society. A regular follow up schedule, case studies and skill enhancement sessions for mental health counselors of NSS UP has also been planned and is being implemented regularly. To facilitate mental health counsellors a core backup team of professional psychiatrists and psychologists at state level has also been instrumental. The initiative has received tremendous responses from all sections of the society, motivating us to design more advance training and learning sessions for mental health counselors.

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Case of Economic Duality Subverting Rural Reforms: Drawing Parallels from MGNREGA and Farm Bill 2020

Sugandh Kumar Choudhary*

Economic duality is often a major impediment in social and economic reform where rich and powerful dictate policies and subvert the end intended result of efforts by the government. MGNREGA could not be successful to its potential due to opportunities being underutilized by the target workers. Relatively well – off derailed the employment generation scheme as they command who gets what and how much. This paper aims to analyze how the farm reform bill is exposed to similar risks as rich states are in position to mandate the farm bill at the expense of poor states.

Agricultural progress is an essential part of rural development and despite of more than seventy-three years since independence, India is predominantly an agricultural economy, with approximately 70 percent of the population residing in villages. This naturally calls for policy decisions regarding employment creation, infrastructure building and human development in favor of areas where majority of the population live. Main workers are defined as those workers who work for more than 180 days in the reference periods. Anyone working for less than 180 days a year are marginal workers[1]. Data in Figure-1 (census 2001 and 2011) clearly indicates that main workers in rural areas outnumber those in the urban areas and hence a small positive policy intervention in rural sector will have multiplier effect on poverty eradication and rural well-being. Any employment guarantee scheme in rural areas is therefore a step in the right direction. In view of low productivity, high dependency, disguised unemployment in agriculture and majority of main and marginal workers in the rural sector, Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was introduced in the year 2006 which guarantees 100 days of public employment in a financial year to rural households who are capable and willing to work at a predetermined wage rate. The objective was to uplift rural poor by generating wage employment opportunities and in the process create productive rural asset that would

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sustain rural income and further boost employment creation opportunities. Various inefficiencies marred the success of MGNREGA due to factors like lack of awareness among rural workers, poor administrative capacity and nexus between rural elite and bureaucracy[2]. Workers find it difficult to implement their legal rights due to illiteracy and intimidation by local authorities. Moreover, sharp spike in rural wages due to workers shifting towards MGNREGA has drawn ire of local landlords to subvert the success of the employment guarantee scheme. Dependency of rural marginal workers continues awfully in states where the legacy of historical zamindari system persisted and is reflected in reduction of public work provision wherever there is concentration of land ownership. According to a study[3], there is a decrease in public job provision for every unit increase in land Gini coefficient. It is thus, evident that land reform is a pre – requisite for a successful implementation of any employment guarantee scheme.

It becomes imperative to analyse the pattern and trend of land distribution in the last decade. The average land distribution per person has been falling in the last decade from 0.95 acres in 2002 to 0.88 acres in 2015. It clearly reveals that the government possession of surplus land and its distribution among landless workers has slowed down. The process has been majorly affected by court litigation with judgements often undermining the land distribution system[4]. Let us understand the pattern of operational holding of land to have greater insight about land inequality in the country. As per agricultural census[5] 2015 – 16, operational holding is defined as "all land which is used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others without regard to the title, legal form, size or location". Number of marginal holdings increased by 5 percent between 2000 – 01 and 2015 – 16 but number of large holdings decreased by only 0.4 percent, clearly indicating that large operational holdings have not decreased much in the last fifteen years. Land inequality is acute as indicated by 2011–12 census data according

Figure-1: Rural Urban Workforce
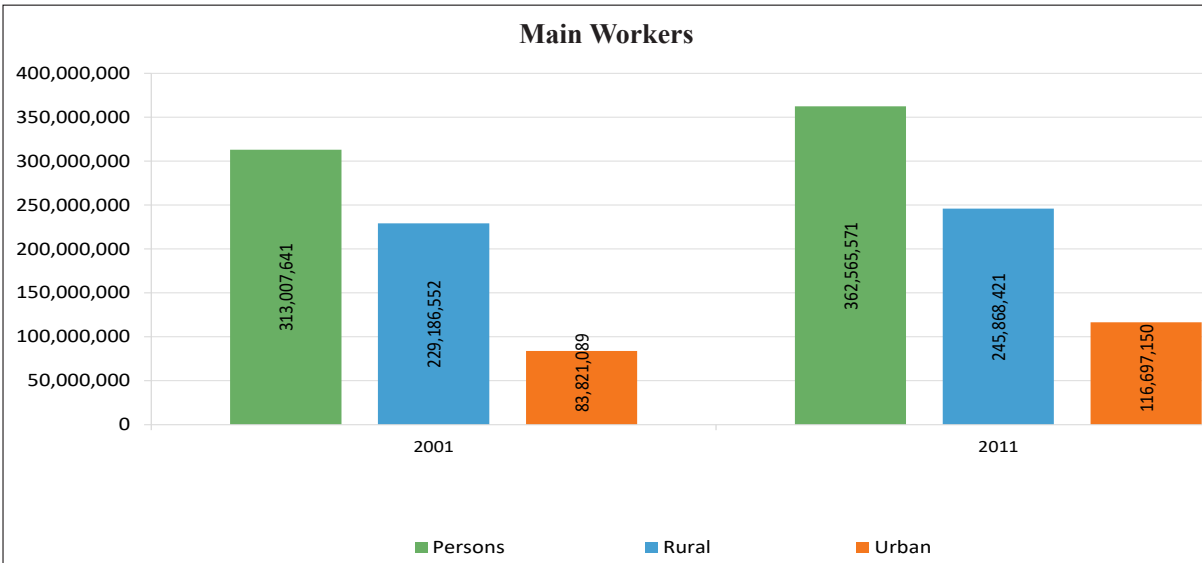
Source: Census India

**Figure-2: Per Person Land Distribution (in acres)**
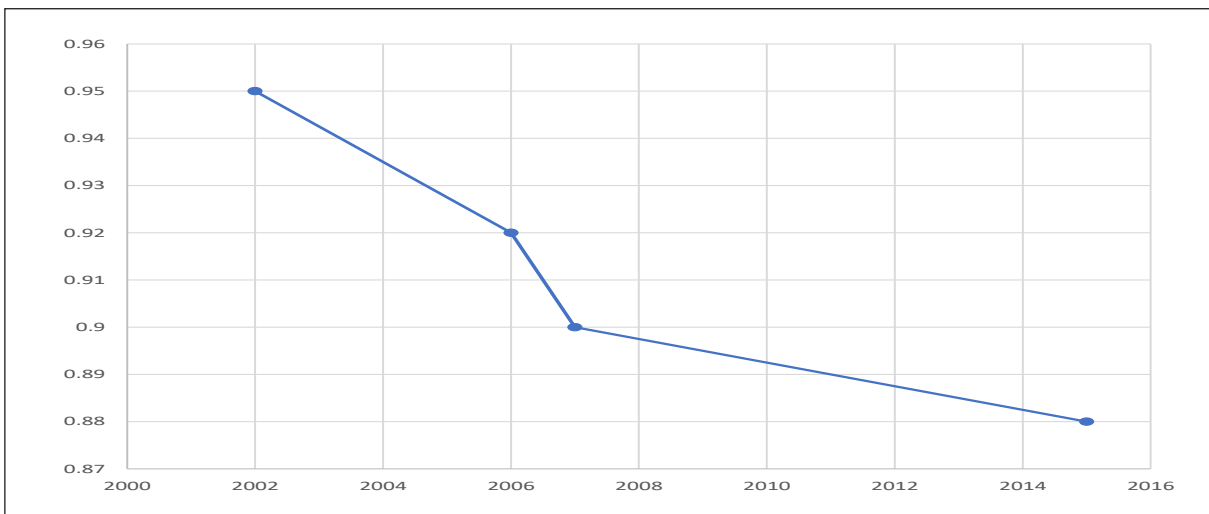
Source: Ministry of Rural Development, GoI

to which 5 percent of farmers control 32 percent land and "marginal" farmers hold 1 acre of land for every 45 acres held by "large" farmers. On the other hand, failure of land consolidation has resulted in increase in marginal holdings which could be the result of division of land among semi, medium and small operational holdings beside partial success in land distribution[6]. Increasing fragmentation of land holdings badly affects farm productivity making agricultural activity economically unviable. As is evident from the graph, number of marginal land holdings increased significantly since 1970 – 71 but number of large land holdings more or less remained static in the same time period. Around 86 percent of all land holdings are small and marginal operational land holdings *i.e.* less than 2 hectares. These small and marginal farmers are net buyers of food as their produce for self – consumption is negligible. Here lies the catch. Farmers unwarranted fascination with Minimum Support Price (MSP) is wrongly placed and ill informed. Regular demand to raise MSP is often made by rich landlords with political nexus at the higher echelons who end up projecting MSP as sine – qua – non, of rural well – being. Effectively, protest by rich farmers from Punjab and Haryana who tend to benefit more from MSP and *mandis* are getting political support at the expense of small and marginal farmers in Bihar and Uttar Pradesh. Will

Figure-3: Source: Agricultural Census 2015 – 16
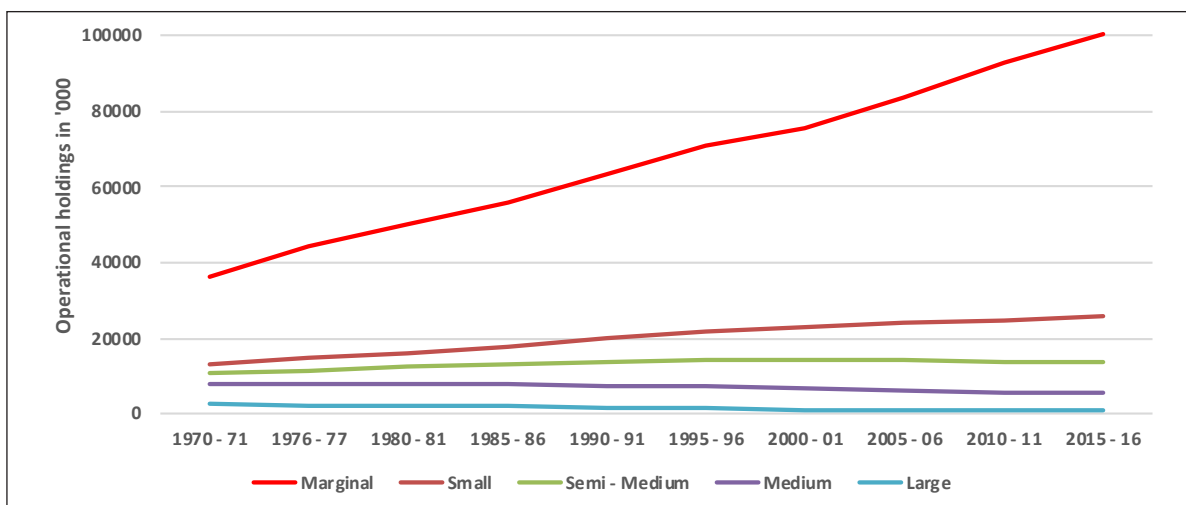
it again be a case of rich landlords hijacking rural reforms disfavoring marginal farmers just like it did to MGNREGA? APMC act was abolished in Bihar 14 years ago in 2006. The reason being majority of farmers were small and marginal farmers having no or negligible surplus to sell in *mandis*. Moreover, marketing committees were center for corruption and manipulation. Contrast this with farmers from Punjab and Haryana where rich and large farmers have surplus to sell and are on roads sloganeering against the government. State governments fear losing revenues generated from *mandis* where they have invested significantly.

What does the farm bills do? In simple words, three farm bills essentially bypass APMC[7], gives freedom to agribusiness house to stock[8] and promotes contract farming[9]. The first bill does not threaten APMC rather provides opportunity to farmers to sell on other platforms where it deems fit, thus expanding farmers' choice. The second bill legalizes stocking which is crucial for private investment in agricultural infrastructure like warehousing and cold storages. The third bill has provision for farmers entering in contract farming with companies. The contract would for the produce of the land and not the land itself. The bill attempts to liberalize highly regulated agricultural markets which is often seen as major roadblocks for private investment in the agriculture sector[10]. States deficient in agricultural infrastructure would be vying for such opportunities of lucrative private investments in agriculture on the one hand, farmers with diversified farming unlike Punjab and

Haryana would be anticipating huge opportunity in terms of higher remuneration from contract farming and wider choice to sell, not necessarily limited to *mandis*, from the bill.

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Making India Healthy and Wealthy through Health Literacy: A Futuristic Model[#]

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Since its outbreak, the COVID-19 is impacting the entire world, including India. In the literature published in 2020, it was predicted that the pandemic was not likely to cease soon, and many more waves, similar to the 1918 Spanish flu, COVID-19 would recur again. Many countries including India had already suffered the second wave. In India, the second wave had hit hard and the death rate was significantly higher than the first. With 30,134,445 million corona cases, India has surpassed Brazil, Russia, Italy, and the United Kingdom and emerged as the second most affected country after the United States of America (WHO, 2021). As on 26.06.2021, a total 3,899,172 people have died at global level due to corona virus and the death rate (WHO COVID-19 dashboard). Unfortunately, both in affluent and developing countries; health infrastructure was found inadequate to address the problem (Abhishek, et. al., 2020).

Whereas, India is still reeling with the second wave of the catastrophic flooding of COVID-19, the talks on third wave have already started. Top scientists and officials have expressed concern about the third wave of COVID-19, as it is being anticipated that it will impact children more (Times of India, 2021). The virus is continuously evolving and mutating. In comparison to the first year, the age profile of those infected with COVID-19 in the second wave is mostly unchanged in India. In the first wave of COVID-19, 31 per cent of people in the 30-age bracket were infected, compared to only a 1% increase in the second wave, which stands at 32%. In both waves, however, the percentage of persons infected by COVID-19 in the 30-40 age range stays the same, at 21%. A total of 70% of hospitalized patients in both waves are over the age of 40, demonstrating that the elderly are still more vulnerable (Dey, 2021).

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India is the world's biggest democracy and the second most populous nation after China. According to the 2019 revision of the World Population Prospect the Indian population stood at 1,352,642,280 in number. As far as size is concerned, India is the seventh-largest country in the world with a total land area of 3, 287, 69 square kilometres, covering 2.4 per cent of the total land area (Ministry of Statistics and Programme Implementation). India's rural population accounts for 60-70% of the country's overall population. The Government has created 25,743 Primary Health Centres, 15,8417 Sub-centres, and 5,624 Community Health Centres to provide healthcare to people in rural India (Abhishek, et. al., 2020). Is it enough for a populous country like India? Studies indicate that it is insufficient in comparison to India's overall population (Abhishek et al., 2020). Moreover, achieving the objectives of the health mission without health education and health literacy is extremely difficult. According to the Officials at the UN, WHO, and WWF pandemics like COVID-19 are the outcome of destruction of nature, and the entire globe is ignoring this truth for decades. As per the WWF report, "the risk of a new 'wildlife-to-human disease' is emerging higher than ever, with the potential to wreak havoc on health, economies and global security," (The Guardian, 2020). India must take appropriate steps to inculcate the habit of taking informed decisions in the people right from childhood by providing health education at school level to prepare them to tackle any unanticipated problems like COVID-19 in the future. Furthermore, the teachers at School as well as Higher Education Institutions must participate in health awareness programs. Health literacy modules should be into course curriculum, and develop a communication channel to reach out to rural areas in order to keep villagers health literate.

The devastating effects of the second wave of COVID-19 in India, as well as a sharp increase in contagion at an alarming rate and higher mortality rate among both the older and younger generations, are the compelling reason to conduct this study on

health literacy. What precautions should be taken to confront the current situation and decide how to deal with a calamity like this in the future? Health literacy through Schools, Colleges, Universities and Panchayati Raj system, can help us avoid such types of health disasters in the future. Keeping all these things in mind, a comprehensive literature search was conducted to obtain solid evidence-based explanations for all the concerns involved in it. Journal Articles, News Papers, BBC News, Government Reports, and other sources of information have been used to strengthen this study. The evidence-based literature and analysis strongly advocate that health literacy modules should be included in the curriculum of the schools, colleges, and universities. It is also our primary duty to look after the health of our villagers as well. They play a crucial role in society. However, India has a well-developed structure, known as Panchayati Raj, through which we may educate our villagers on how to protect themselves from seasonal diseases, epidemics and pandemics.

Top 10 Pandemics

Human history has records of some major pandemics, among them, the top 10 pandemics are arranged according to the highest death rate along with year of origin and duration as well as symptoms in Figure -1. The Figure-1 shows that Spanish Influenza was the biggest cause of death worldwide, followed by the Justinian plague, the Black Death, and other diseases. If now suitable precautionary steps are not taken, COVID-19 may become the leading cause of death worldwide. To stay protected against such fatal diseases, the entire world should have a comprehensive framework in place. Health

is wealth; the country's poor health could have a significant influence all over its output. This Pandemic wreaked havoc on the whole global economic structure including India. In April, the second wave of COVID-19 rendered 73.5 lakh people jobless (Nanda, 2021). The Indian economy was forecast to expand by 7.5 per cent in 2021, as per the report of the United Nations, but the country's situation remains precarious (United Nation, n.d.). According to a research published in The Lancet, over five million people die each year owing to insufficient health care throughout the world, with nearly 1.6 million from India. (Iyer, 2018). Illiteracy and low educational status is a major concern in low-income nations, and these are the major cause of disease and mortality (Pednekar, Gupta, & Gupta,

Fig-1: Top Ten Pandemics that have had a Massive Worldwide Impact (Atlas Magazine, 2020)
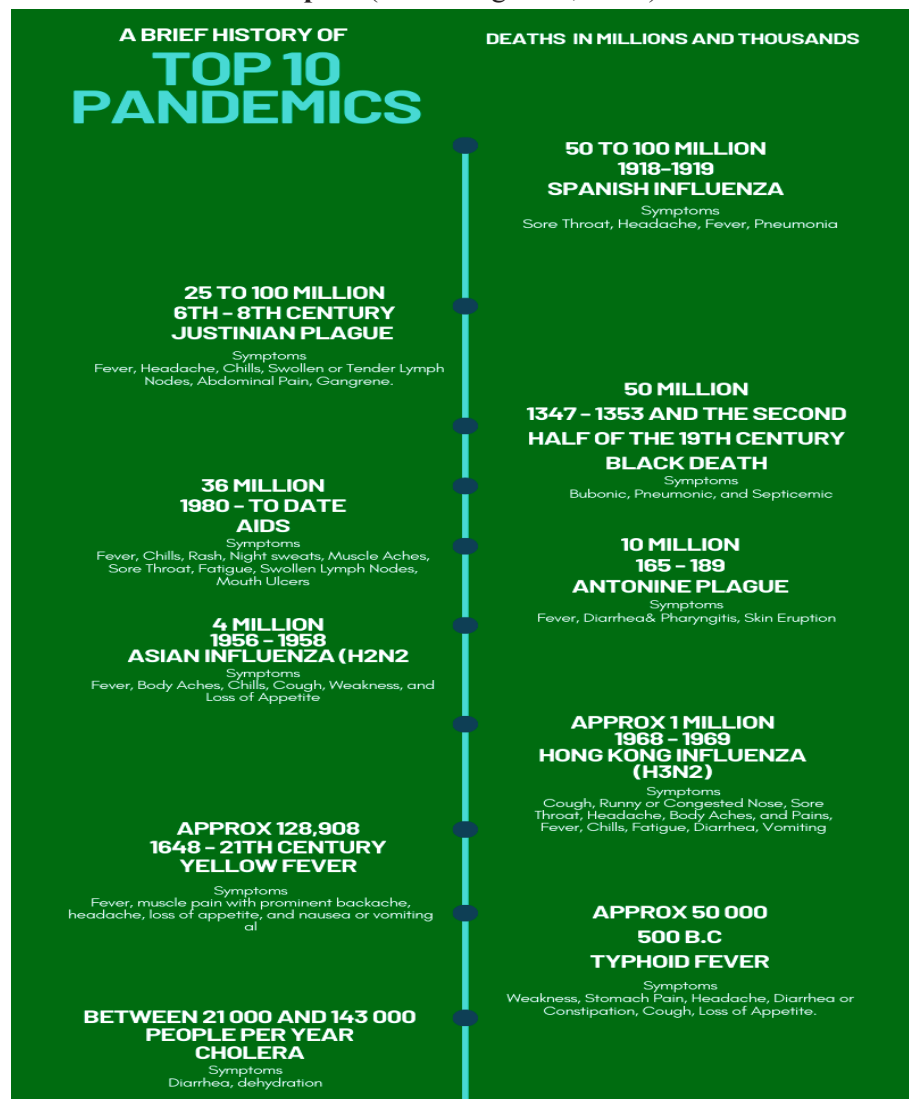
2011). However, India is ranked 35th in the 2019 Worldwide Education for the Future Index (Sheth, 2020). India's current educational policy 2020 has been regarded as the finest policy for educational progress. This will revolutionize India's educational systems; nevertheless, health literacy is also required for increased productivity. Successful learning is support by good health. Learning goes hand in hand with being healthy. The two are inextricably linked: education and health.

Health Literacy @ School Level

India needs the largest medical infrastructure and sufficient medical equipment to serve and save the nation from such unanticipated pandemics like COVID-19 in future. Furthermore, one of the major concerns in today's scenario is poor health literacy among the general public. Many lives could be saved from numerous seasonal diseases if people in rural and urban areas could be made more aware about some basics of health and safety issues. Using COVID-19 as an example, serious conditions have occurred to people who have already been diagnosed with other illnesses. Physically healthy persons with health literacy on the other hand, have a lower risk of being affected by this virus. According to the Institute for Health Metrics and Evaluation (IHME), the COVID-19 pandemic has become India's second-leading cause of mortality after ischemic heart disease in just eight weeks (Pandey, 2021).

India is being hit hard by the second wave of COVID-19. The entire Indian medical, political, and social systems are working enthusiastically to bring the situation under control, but no one can help if the country's health literacy is low. In India, at least nine out of 10 adults are ignorant about health issues (Kumar, 2021). People who lack health literacy are more likely to be infected by critical diseases like pandemic influenza and non-communicable diseases, and they may even die. Low health literacy is linked to a failure to seek medical attention quickly. Academic success, quality life, and economic output are all linked to health. Health Literacy programmes in schools have enhanced quality and competitiveness in education while also lowering common health problems, according to research from both developing and developed nations. (WHO, 1998) Therefore, Indian Education System should prioritize health literacy promotion among children during their school years through the teachers. Therefore, teachers should be well-versed in health education so that they can effectively impart Health Literacy to the students.

Teachers should participate in health awareness programmes conducted by various institutions to keep themselves informed. Since the early 1990, the World Health Organization's Global School Health Initiative has advocated for the importance of health promotion in schools (WHO, 2000). Schools may make a positive contribution to the health and wellness of children and their families by establishing a different way of learning in today's youth. In light of the foregoing, it is recommended that the School Curriculum should include certain topics of Health Literacy, as mentioned in Table-1.

The Table-1 illustrates the broad topics that students in primary and secondary level should be required to discuss. One of the main reasons for people in India descending towards poverty is out-of-pocket health expenses. According to the 2016-17 National Health Accounts (NHA), the Out-of-Pocket-Expenditure (OOPE) was approximately 64.2% in 2013-2014; however, as a result of many government measures aimed at the health sector, the OOPE has decreased and now stands at 58.7% in 2016-2017 (Pilla, 2020). Regardless of who spends money on healthcare, it has a direct effect on the Indian economy. India must think beyond philosophical and ritualistic practices in order to help the nation to achieve world excellence. India needs to conduct rigorous research to determine the root causes of illiteracy, hunger, death, malnutrition, and other challenges. By giving tribute to Nelson Mandela quote "Education is the most powerful weapon you can use to change the World" (University of Pretoria, n.d.), it means that qualitative education may make human beings as an instruments of change. After civilization, education became the world's primary focus, and those who advance strategically by implementing changes and providing education within a structural context are in the lead. Individual health literacy combined with good education can have a positive effect on national productivity. Every life on the earth has some scientific logic to it. Hence, we Indians must adopt a scientifically sound lifestyle. Only by modifying the educational framework would this be possible.

Table: 1 Proposed Topics in Course Curriculum on Health Literacy for Schools

Sr. No	Topics	Learning Outcome
1.	Health is National Wealth	Capable of understanding how valuable physical and mental health is.
2.	Role of Health in Nation Building	Describes roles of health in national output.
3.	The History of Pandemic Influenza and Its Global Impact	Capable of understanding the history of major pandemics around the world, as well as their impact on the economy and society
4.	Health Literacy	Capable of becoming health-literate and inculcating literacy in one's family, community, and friends.
5.	What precisely are diseases?	Capable of identifying the major disease.
6.	Disease types and symptoms	Capable of grasping the various diseases and their symptoms.
7.	Injuries and its types	Learn about the various injuries and effects of ageing.
8.	Initial Treatment	Capable of providing preliminary treatment to a patient before transporting them to the hospital
9.	Home Remedies	Capable of understanding various types of home remedial treatments based on Indian-born traditional medicine.
10.	Health Nutrition Hygiene and Sanitation	Understand health nutrition, hygiene, and sanitation, as well as their applications in daily life.
11.	Eating disorders	Capable of Understanding your eating habits and how they affect your health.
12.	Tobacco, Alcohol & Drugs	Capable of understanding how harmful tobacco, alcohol, and drugs are to humans.
13.	Physical Exercise and Yoga and its benefits	Capable of performing various types of physical and mental exercises at home in order to maintain fitness.
14.	Vitamins and their it types	Capable of understanding the various types of vitamins required by the human body, as well as their benefits
15.	Vitamins found in fruits and vegetables	Describes the various types of vitamins found in fruits and vegetables.
16	Medical Departments and their Functions	Capable of understanding various medical departments and their functions
17.	Use and awareness of primary tools and technology available for in-house use.	Capable of using portable medical equipment such as a thermometer, Pulse oximetry, and many others.
18.	Population Control	Capable of comprehending the safety precautions that must be taken in order to keep the population under control.
19.	Natural Environment	Capable of comprehending the importance of nature in keeping the earth safe and calm
20.	Sources of Health Literacy	Capable of determining where to obtain reliable health-related information.
21.	Medical Ethics as well as Law and Order	Capable of understanding medical professionals' moral ethics and adhering to law and order.
22.	Writing and Reading Skills	Capable of understanding the doctor's prescription and instructions.

Health Literacy @ College and University Level

The Health Literacy job should not only be assigned to medical professionals to raise public awareness, but also to non-medical professionals such as university, college, and school faculty and students. Of course, every Indian citizen who is health literate bears the responsibility of making others literate. It is a well-known fact that necessity is the mother of invention. Regardless of how well-developed the medical infrastructure is, it will not be successful unless and until the citizens are able to take benefit out of it. Therefore, a health literacy programme should be included in the UG and PG levels. In the light of the foregoing; there are certain topics as mentioned in Table -2 which can be included in the course curriculum of higher education.

These days' optional papers in UG and PG level courses are offered by Indian universities and institutions in order to provide students more freedom. Take an example of the Department of Library and Information Science at University of Delhi. In the MLISc II semester syllabus, there are numerous elective papers under two categories: Elective Papers and Elective Interdisciplinary Papers (Choose any one of the following options). The DLIS, University of Delhi allows the students to read by choice, not by compulsion. Learning is something you want to do, not something you are forced to do. These days, choice-based education has now become widely available. However, there can be no alternative in the case of health education since health implies wealth. Therefore, Health Subject should be compulsory rather than elective at the UG and PG level, no matter whether credits will add to the progress report or not.

Health Literacy @ Panchayat Level

In view of anticipated 3rd wave, medical professionals have been raising awareness about how to protect your child from the third wave via digital media. In addition, medical professionals are releasing digital videos on how to increase your oxygen level, as a preventive measure if someone has COVID symptoms, and even prescribing medicine based on symptoms since the first wave of COVID-19 . This is so called health literacy or health literacy through digital media. However, only Hindi and English are supported as communication languages. India is a diverse country with distinct local and regional languages of each state. If this is the case, what will happen to those who only understand their native language? In order to reach the end user with this life-saving information at a remote level, it is suggested that a system should be developed to assist in translating COVID-19 preventive-related information into a native language and making it quick and easy to be understood by the diverse language people. It is also well known that nearly 70% of India's total population lives in rural India (Press Trust of India, 2013). Mahatma Gandhi said, "India does not live in its towns, but in its villages." By paying tribute to Mahatma Gandhi, the current

Table: 2 Tentative Course Curriculums on Health Literacy for Universities and Colleges

Course	Topics	Learning Outcomes	Remarks
Undergraduate/ Post Graduate	Introduction to Health. • Concept of Health • Define health Literacy • Objective of Health Literacy • Principles of Health Literacy • Health Communication Media • Project Reports • Field Work	• Capable of understanding physical, mental, Social, economic health, different types of diseases and symptoms and many others. • Capable of understanding the objectives and principles of health literacy. • Capable of understanding communication of health media, Source of health literacy. • Explore the health literacy rate of India.	• Compulsory • Duration is 1st year only (1stsem& 2ndSem). • Qualifying. • Project Report may be submitted in the final year. • Project may be digital video or may be a survey for a particular area. • In field work: Organize Health Literacy Programme in remote areas at least 5 during UG & 3 in PG.

Prime Minister, Shri Narendra Modi, reiterated Gandhi's experience and stated, "If we have to build the nation, we have to start from the villages." (Subramanian, 2018). Keeping this in mind, we, the people of India, must collaborate to increase literacy rate among the villagers. A person must be literate in order to fully understand health literacy.

To accomplish this, first educate yourself, then educate your neighbourhood, then move on to the village level, and so on. The Government of India has taken several initiatives to eradicate illiteracy, poverty, and other issues, and will continue to do so in the future. However, the success is entirely dependent on how seriously and sincerely the people of India take it. The government can only offer assistance; citizens of India must recognise their own responsibility. India has a good structure of Panchayati Raj System with a better communication system from the centre to the villages.

The main objectives of the Panchayati Raj System are Economic development, Social Justice, and the Implementation of Central and State Government Schemes. It means that the Panchayati Raj system has removed communication barriers, and created a smooth system of transfusion of programmes that are being launched by the centre to the needy community. Hence, health literacy among the villagers via PRS is feasible. We can achieve our objectives through the Panchayati Raj system as depicted in fig-2.

Teachers at all levels, including school, university, and college, must be involved at this point. All the teachers must have competency and skills for locating, gathering and evaluating health related information from the different reliable sources. Ministry of Health and Family welfare, Government of India has released various guide lines, video to prevent the spread of COVID-19. For example, Awareness materials such as videos on appropriate behaviour during COVID-19, extending support towards persons returning home during COVID-19, showing respect towards on our Corona Warriors and many more. In addition to these, they also provide training on Management of Pregnancy if affected with COVID-19, Video training for Ventilator Support for COVID-19, Training for Nursing Personnel and many others. If the value-added information reaches the villages, they will get benefitted out of it.

India has 28 states and 8 union territories and 718 districts (India. govt.in, n.d.), each state has Schools, Colleges and Universities. Local language teachers are found in almost every university, college, and school, and they know their community better than anyone else. To close the gap in health literacy abilities among the villagers, teachers who are competent, experienced, and trained professionals capable of reading, writing, and communicating must provide their support in eradicating health illiteracy in India.

Engagement of LIS Professionals to Combat the Fake News Problems

For the past few years, misinformation has wreaked havoc on

**Fig-2: Health Literacy through Panchayati Raj System**
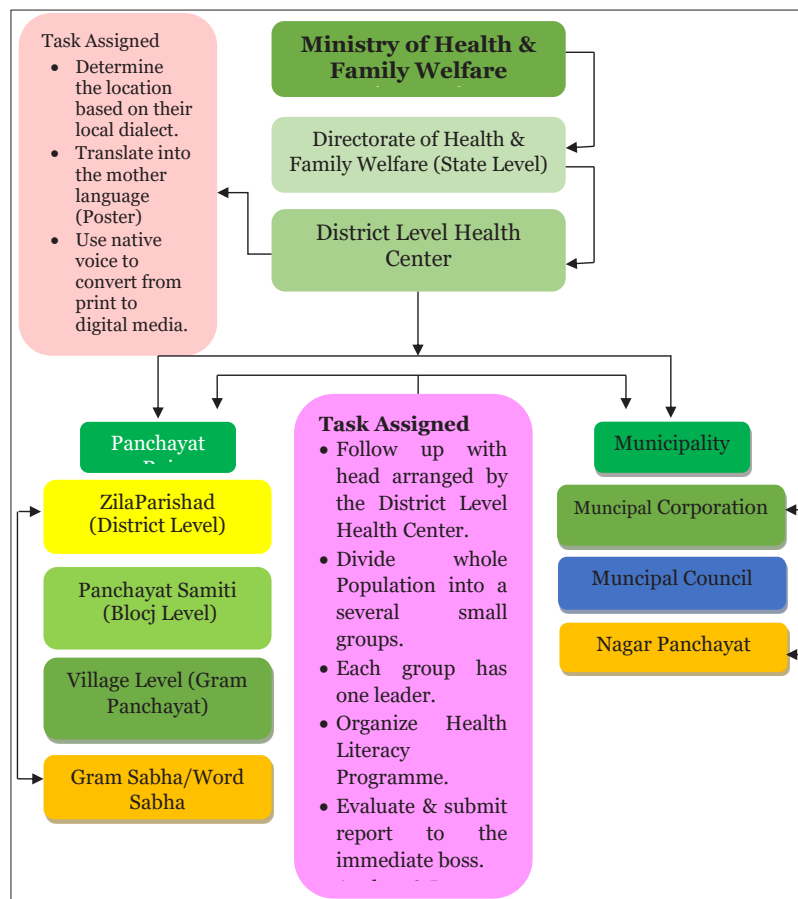
human lives all over the world, including in India. This pandemic outbreak has brought the entire world to its knees. On the other hand, the proliferation of false information on health adds to people's anxiety. It is found in the literature that there are approximately 376.1 million active social media users in India and most popular social media platforms in India are Facebook, Twitter, WhatsApp and YouTube (Al-Zaman, 2021). According to a BBC report published in 2020, 800 people could have died worldwide during the first three months of the COVID-19 time frame due to the corona virus-related misinformation. In an article published in American Journal of Tropical Medicine and Hygiene, approximately 5,800 people were admitted to hospital due to consumption of false health related information from Social media. The World Health Organization said that the entire world has been suffering from the "Infodemic ''along with Corona virus (Coleman, 2020). In these circumstances fake news on social media brings new threats to the community.

In the month of April, a video was released "claiming WHO has warned of 50,000 COVID-19 deaths in India by 15th April" but it was totally fake (Nagpal, 2021). During the health-care crisis, such misinformation bring people's morale down.

People can keep away from such types of fake news by developing social media literacy skills. The government must take significant measures to address the situation; else, people will lose faith in actual news. In addition, there has been a lot of misconception about COVID-19 food and eating habits in the society. According to a study conducted by University College London and the Health Sciences Academy, 43 percent of people incorrectly believe that washing fruits and vegetables with soap or diluted bleach is a safe way to eradicate the COVID-19 (Whitworth, 2020) If such misconceptions and false information is spread among villagers, a large number of people may succumb to other pathogenic bacteria rather than the COVID-19. In this regard, library and information scientists may be able to play a key role in curbing fake news in society. Libraries from all around the world are demonstrating their existence by providing resources and services at user's locations throughout this present pandemic. During their professional education, librarians receive considerable instruction on how to evaluate material from a variety of sources.

As Indian society is evolving into a technologically oriented society, digital literacy, media literacy, and information literacy are becoming increasingly essential in combating disinformation.

Figure -3 Projection of Internet Penetration
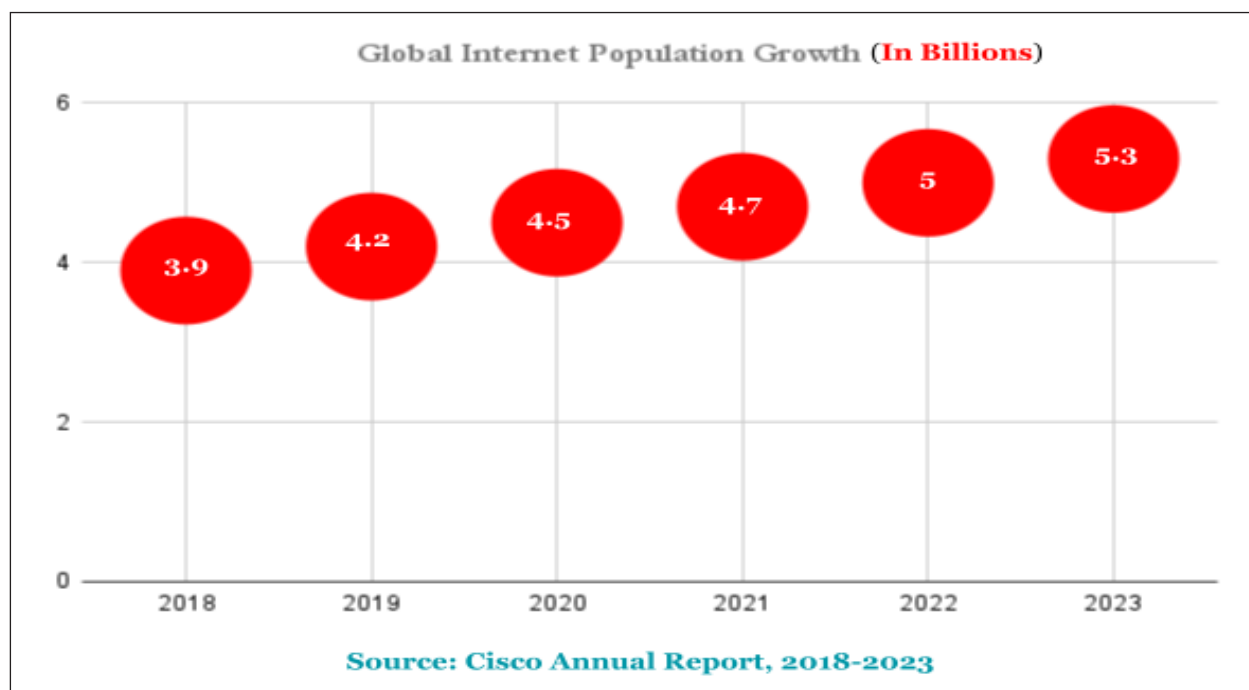
Source: *(CISCO, 2018)*

Keeping all these things in mind, the Department of Library and Information Science, University of Delhi has incorporated a paper on Information Literacy at Masters Level. A competent librarian should be familiar with information resources, content analysis, content management, content evaluation, various tools and technology and many more. Library and Information Science professionals and people who are information literate are aware of the true source of knowledge.

Librarians are trained to determine the current needs of the peoples. Take for example, the public's most pressing need during this pandemic is health-related information, and the Ministry of Health and Family Welfare is the most reliable source of such information. To put a stop to the misinformation, librarians should collect and organize health related information from the WHO and the Ministry of Health and Family Welfare, and disseminate it to the villagers by using social media. Librarians also can find the truth behind the fake news by analysing various sources. The Press and Information Bureau have launched a service called "PIB Fact Check," which allows you to upload a suspicious image and receive a quick response(Govt of India, n.d.)There are many sources and resources available, but only a few people are aware of them; however, librarians can help bridge these gaps.

The Internet Penetration and Digital Health Literacy

According to Cisco's Annual Internet Report, 66 % of the global population is expected to use the Internet by 2023.The Figure-3 conveys the year-to-year growth of the Interest population and projection for the year 2022 and 2023.

Since the commencement of the digital revolution in India, the country's Internet population has been quickly growing. In the year 2020, India's entire Internet population was 622 million, with urban Internet users accounting for 323 million, or around 67 per cent of the entire urban population. Digital adoption has resulted in a sharp increase in the number of Internet users in rural areas, which now stands at 299 million, or around 31% of the entire rural population. By 2025, it is projected that the number of Internet users in India will have risen to 900 million, with rural India potentially outnumbering urban India (Press Trust of India, 2021).

The primary goal of digital governance is to transform India into a technology-driven society and strengthen citizens' interests and improve their lifestyles. The Smartphone plays an important role in attaining digital governance goals. As per the report published by the Indian Cellular & Electronics Association, the number of Smartphone users in India is likely to rise to nearly 83 crore by 2022 (ENS Economic Bureau, 2020). However, digital literacy remains a concern in India. According to the National Statistical Organization's (NSO) latest data for 2017-2018, just one out of every ten households own a computer, although a quarter of all houses have access to the Internet. The majority of Internet access (42%) is found in urban regions, with only (15%) in rural region (The Hindu, 2020). Some of India's healthcare issues might be addressed with the use of digital technology such as telemedicine consultation service, digital health literacy. Various infectious diseases, which arise especially among rural women, can be avoided by raising awareness using digital technology. However, the digital literacy rate among village women is poor. According to a survey by the National Family Health Organization, more than 60% of women in 12 states and Union Territories have never accessed the internet (The Times of India, 2020). Dealing with complicated health information necessitates a high level of health literacy.

Digital Health Literacy (DHL) necessitates a unique set of skills, including the competence to identify, review, critique, incorporate, and use health information collected from online sources. Internet penetration has been expanding day by day, and online communication channels have become the key source for information searching. However, both true and misleading information is present in online communication channels. People with digital literacy skills may be able to pull important information from a variety of sources and apply it to their daily lives. Although the government's progressive efforts have offered a light of hope for rural people's digital empowerment. The Indian government has undertaken various efforts to improve people's digital literacy, such as the Digital Saksharta Abhiyan, which was initiated in 2014 and completed. Another initiative, Pradhan Mantri Gramin Digital Saksharat Abhiyaan, intends to make nearly six crore people digitally literate at the village level across the country, with one

person per household (Digital India, n.d.) However; there is still a long way to go.

Correct Data is the Fundamental Key to Combat Unforeseen Situation

To improve the programme, it is necessary to conduct periodic reviews and make suitable judgments, which are based on correct data collected through authentic agencies. The inference which has been derived from the processed data that assists to create background knowledge helps in decision making. Data can be recognized as significant assets in a variety of ways, including improving people's lives, making informed decisions, obtaining the desired result, locating a solution to a problem, keeping track of everything, and so on (The Council on Quality and Leadership, n.d.) Take COVID-19 as an example: India's ability to battle COVID-19 is limited due to a lack of 'swachh statistics.' Some COVID-19 positive cases and fatalities under home quarantine or those waiting outside hospitals have gone unreported. Furthermore, 70% of India's population lives in rural regions, where testing facilities are scarce and people are terrified of being hospitalized if they seek medical attention. If that's the case, how accurate will the statistics be? Hence, data is essential to develop the medical infrastructure needed to combat COVID-19 (Sangal, 2021). The growth/improvement can't be measured without data. Data is vital for taking instant decisions to combat any situation. Every organization must have an appropriate data flow and control system to continue in the right direction. India has a well-established system, but it needs to be properly utilized. Considering the Panchayati Raj System of India, Government can communicate the information through the proper channel and at the same time receive feedback from the same. As a result, the return on investment may be easily measured.

Conclusion

Planting a tree entails a number of steps, including finding the best place for the tree, using the right amount of compost, and caring for the tree since its infancy. Such a long investment will undoubtedly bear fruit one day. The Indian Education System requires the same level of attention. However, India is moving on implementing best education system. In recent NEP–2020, government has emphasised on coding and computational thinking, health and nutrition, digital literacy, environmental awareness including water and resource conservation, sanitation and hygiene and many more in middle school level (MoE, 2020) which is praiseworthy initiative of the Government. Good health leads to better education and output. It has been found from the study published in an International Journal of Environmental Research and Public Health that Health Literacy and Digital Health Literacy should be mandatory topics in university curricula, as well as promoting national health education standards at the primary and secondary school levels and also providing teachers with training that could lead to an increase in Health Literacy and Digital Health Literacy growth (Patil, et. al., 2021).

To eradicate poor health in the country, there is a need to prioritise the introduction of health literacy at the School, College, and University levels. Starting with school, the results will be available in 8 to 10 years, whereas college and university results will be available immediately. Teachers and students can improve villagers' health literacy by using the pilot study method. Furthermore, through the Panchayati Raj System, the teaching community can establish a supply chain of lifelong learning for the villagers. Librarians are the cornerstone of every organization in terms of information sources and services, and their presence is particularly important in policymaking aimed at reducing the country's inadequate health literacy. India has more youngster than any other country in the world. Thus, India has a golden opportunity to provide health literacy to the younger generation through the educational system, which would have an immediate impact and eventually eliminate inadequate health literacy from the country.

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Decade of Action: Taking Sustainable Development Goals 1,2, 3 and 6 from Global to Local

India is placed at 120th rank in the Sustainable Development Report—2021. This calls for an urgent action from all sectors of the country. Due to their unique position in the society, the HEIs have immense scope and potential to contribute towards achieving all the 17 SDGs and thereby accomplishing the 2030 agenda. Rather, realizing the SDGs without the involvement of the higher education sector is quite an impossible task. In India, there is a lot of tacit contribution of HEIs towards realizing SDGs but there is no data on classified efforts of HEIs on the same. In the impact ranking of Times Higher Education which assess universities with reference to their contribution in realizing UN SDGs, only 2 public universities and 9 private universities could find place. This compels us to think whether the Indian Higher Education Institutions are responsible enough in their approach towards sustainability in delivering education. Most importantly, it makes us ponder why we are not able to tap the potential of HEIs in achieving SDGs. To apprise the Indian HEIs about their role, and to reinforce them to take up the task of accomplishing SDGs as their prime responsibility, AIU as a representative body of HEIs in India, has set-out to organize all the Zonal and National Vice Chancellors Conferences in 2021- 22 on the theme 'Realising Sustainable Development Goals through Higher Education Institutions'. HEIs in India have displayed their potential during the COVID-19 crisis and demonstrated why their expertise and involvement matters in solving the crucial challenges. We are left with one decade only to accomplish the 2030 Agenda. It is therefore, a crucial step at an apt time, to gear the HEIs to dedicate themselves to contribute significantly in achieving those goals. The VNR Report presents valuable insights which can help all those who are working towards realizing the SDGs. In view of this, and also for wider dissemination of information, the portion of VNR Report relevant to the theme of Central Zone Vice Chancellors' Meet i.e. **'Realizing SDGs through HEIs for Securing Basic Essentials of Well-being** (SDGs 1, 2, 3 and 6) is being reproduced verbatim. AIU duly acknowledges NITI Aayog for the Report.

The SDGs encompass all the key development sectors including education, health, sanitation, employment, infrastructure, energy, and environment, and set time-bound targets to achieve them. From a global perspective and in its own cause, the need for India to achieve these targets remains imperative. Significant progress has already been made across the country in recent years; the tempo of progress must be modulated in an evidence-backed manner to fully achieve the SDGs. Under the federal set up, the Indian States and Union Territories (UTs) are the key movers on the SDG action agenda and have continued to make gains on various SDG targets. NITI Aayog, as the nodal institution for SDGs, has striven to provide necessary encouragement and support to forge collaborative momentum among them. Since 2018, the SDG India Index & Dashboard has worked as a powerful tool to bring SDGs clearly and firmly into the policy arena in our States and UTs.

The Index has, undoubtedly, become the mainframe instrument to measure progress of the States and UTs and provide inputs for evidence-driven action towards the attainment of SDGs, while instilling a tremendous spirit of competition among our sub-national constituents. Calibrating the extent of progress in a comparative context, the two editions of the Index & Dashboard, launched in 2018 and 2019, have helped identify issues and areas needing improvement, pointed out strategies and interventions that could be a source of solutions, and opened up space for peer learning. They have highlighted gaps in the national and sub-national statistical systems and put the much-needed stress on robust SDG monitoring and review - not only at the national level, but more so at the sub-national levels of governance. Continuing on the same trajectory, this latest edition of the SDG India Index attempts to highlight the achievements so far, and indicate the distance remaining to the final targets that mandate primary focus of all levels of government in this Decade of Action. The Index Report & Dashboard - now an annual exercise, has grown to become the country's official and principal tool for SDG monitoring at the national and sub-national levels, owing to its methodological robustness, inclusivity by ensuring active participation of Union ministries and State governments, and transparent process.

Behind the endeavours to achieving the SDG targets, often not quite visible, is the force of partnership among various stakeholders - government, academia,

civil society, businesses, development partners, international organisations, etc. The scope, scale and complexity of the mutually reinforcing aspects of economic, social, and environmental transformation that SDGs require, bring these multiple stakeholders together and make them complement each other's efforts. Such synergies can give birth to innovative ways of working, muster new expertise, widen access to resources, and facilitate sharing of responsibility and accountability in multi-sectoral engagements catering to a diverse clientele. Over the last five years, the SDG implementation process has given rise to a number of partnerships, of different kinds, which need to be highlighted and strengthened. Therefore, partnership as an idea and practice, which heralds this Decade of Action, has been adopted as the main theme of the SDG India Index Report & Dashboard 2020-21.

SDG 1 Poverty

Designing effective strategies to rapidly reduce poverty has persistently challenged nations all over the world. This has particularly been the defining agenda in low- and middle-income countries, where the incidence of both income poverty and multi-dimensional poverty is relatively larger than that in other parts of the world. Such poverty manifests itself in diminished opportunities for livelihood and quality education, lack of access to resources, social discrimination and vulnerability to extreme climate events.

India is implementing a comprehensive development strategy to end poverty in all its forms, through accelerated economic growth and broader social safety nets. A wide range of programmes for promoting gainful employment, strengthening livelihood opportunities and improving accessibility of citizens to basic services, such as health, nutrition, drinking water and sanitation, education, skills, infrastructure and utilities, have been operationalised. The mechanisms for targeted social assistance to people in vulnerable situations are being continuously improved.

Level and Extent of Poverty

The country is focused on steadily accelerating Gross Domestic Product (GDP) growth rate to sustain eight per cent growth between 2018-2023, to become a USD 5 trillion economy by 2025. While the recent COVID-19 pandemic has caused a setback, the economic growth rate in India has been broadly on an accelerating path, with India being one of the fastest growing major economies in the world. The rapid growth of the economy has contributed to 25.5 per cent growth in per capita income which grew from USD 1,610 in 2015 to USD 2,020 in 2018. According to national estimates, poverty rate in India declined from 37.2 per cent in 2004-05 to 21.92 per cent in 2011-12. Further, extreme poverty, as measured by the World Bank's International Poverty line, declined from 21.2 per cent in 2011 to 13.4 per cent in 2015. The incidence of multidimensional poverty, as measured by the Multidimensional Poverty Index of OPHI and UNDP, reduced by half to 27.5 per cent between 2005-06 and 2015-16, implying that over 271 million people escaped poverty. Deprivations significantly reduced in all 10 indicators – nutrition, child mortality, years of schooling, school attendance, cooking fuel, sanitation, drinking water, electricity, housing and assets. Poverty reduction in rural areas has outpaced that in urban areas. Improvement among the bottom 40 per cent exceeded that of the total population.

Social Protection and Safety Nets

The social security net in India covers the vulnerable sections, including the elderly, persons with disabilities, children, women and widows, through multiple targeted pension schemes under the National Social Assistance Programme. Additionally, a sizeable percentage of India's rural population is protected against unemployment to the extent of 100 days of guaranteed wage employment per household in a year under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). 136 million job cards have been issued so far under the MGNREGA Scheme. It had generated 2.64 billion person days of employment in FY 19-20 which marked an increase of about 12 per cent against 2.36 billion person days generated in FY 16-17. More women (54 per cent) have taken advantage of this employment scheme. An additional INR 400 billion (USD 5.33 billion) has been allocated for the benefit of workers in the aftermath of COVID-19.

Access to Basic Services

India has set ambitious targets for poverty reduction, defined not only in terms of monetary threshold of poverty, but also of other factors pertaining to well-being, such as access to nutrition, health care facilities, drinking water and sanitation, education, affordable housing, electricity, clean cooking fuel, and roads and utilities, apart from targeted programmes

for digital and financial inclusion. Financial inclusion of the hitherto unbanked sections of the population has been achieved by ensuring access to a range of financial services including banking, credit, insurance and pension under the *Pradhan Mantri Jan-Dhan Yojana* (PMJDY). As of 1st April 2020, 381 million accounts were opened under PMJDY, of which 203 million were by women. The increased coverage of banking services along with PMJDY has also enabled direct benefit transfer of over INR 11 trillion (USD 149 billion) to the accounts of beneficiaries, which improved the effectiveness of social security provisions. Cash relief has been extended to more than 200 million women bank account holders to meet the hardships of the lockdown during the COVID-19 pandemic under the PM *Gareeb Kalyan Yojana.*

Universalising primary healthcare is strengthened with the initiation of *Pradhan Mantri Jan Arogya Yojana* (PMJAY) programme. The complementing component under the programme, *Ayushman Bharat*, covers 500 million beneficiaries from over 100 million poor and vulnerable families with health insurance coverage up to INR 500,000 (USD 6,666.7) per family per year for secondary and tertiary institutional care. By May 2020, more than 10 million hospital treatments worth nearly INR 134 billion (USD 1.8 billion) have been provided under the scheme. Over 21,000 public and private hospitals have been empanelled across the country to provide inpatient services to the beneficiaries.

Access to safe housing is a critical part of essential services, which is ensured under the initiative 'Housing for All by 2022'. The economically disadvantaged households are provided with financial assistance for constructing houses equipped with basic amenities. Under the credit-linked subsidy scheme, women get special interest rates and benefits. The number of houses completed in a year under the rural component of the programme has increased by about four times from 1.2 million in 2014-15 to 4.7 million in 2018-19. Under the urban component, against the assessed demand of 11.2 million, 10.3 million houses were sanctioned, 6.1 million grounded for construction and 3.2 million delivered as on 1st January, 2020.

Strengthening Livelihood Opportunities and Skilling Ecosystem

Agriculture provides livelihoods to 650 million people or 59 per cent of Indian households and is a key contributor to growth, job creation, as well as poverty reduction. Therefore, there has been a comprehensive array of measures to improve agricultural productivity while simultaneously seeking to double farmers' income by 2022. Interventions include improving crop insurance through *Pradhan Mantri Fasal Bima Yojana* (Prime Minister's Crop Insurance scheme), increasing irrigation efficiency through the *Pradhan Mantri Krishi Sinchayee Yojana* (Prime Minister's Irrigation Scheme), strengthening agricultural marketing, building up farmer producer organisations for all-round promotion of farm entrepreneurship etc.

To increase the income levels of low-income groups through better skilling opportunities and more productive employment, India has introduced measures and programmes to revamp the educational and skilling ecosystem by reorienting the skilling curriculum to the demands from the industry, creating infrastructure and ecosystem for promoting entrepreneurship, rural business models, micro and medium finance for start-up projects and micro-enterprises. The range of interventions to ramp up the skilling and livelihood ecosystem include Stand Up India, Skill India, National Apprenticeship Programme, and National Rural and Urban Livelihood Mission. As a result, the share of regular wage/salaried employees increased from 18 per cent in 2011-12 to 23 per cent in 2017-18, with a growth of around 26.2 million new jobs. Proportion of women workers in regular wage/salaried jobs also saw an increase from 13 per cent in 2011-12 to 21 per cent in 2017-18.

Monitoring Progress at the National and Sub-national Levels

India has a robust monitoring framework to measure the progress of the country and its sub-national constituents by way of the SDG India Index and Dashboard. For SDG 1 and its disaggregated five national indicators, the overall Index Score for the country is 50 and ranges between 28 and 72 for the States, and between 33 and 58 for the UTs, on a scale of 0-100, where 0 denotes the worst performance and 100 denotes achievement of the target. This indicates that the distance to target covered so far by India under SDG 1 remains 50, with a significant variation among the sub-national units.

Challenges and Way Forward

- *Regional Variance*: Much of India's poverty is concentrated in rural areas and in low-income States. The difference among the States in terms of the proportion of people living below the

poverty line is stark: Chhattisgarh has 39.9 per cent of people living below poverty while the corresponding figure for Andaman & Nicobar Islands is 1 per cent. Between 2004-05 and 2011-12, the percentage of people below poverty line has decreased significantly from 13.8 percent to 5 per cent in Goa. However, Chhattisgarh has seen only marginal reduction, from 40.9 per cent to 39.93 per cent.

- *Feminisation of Poverty:* Feminisation of poverty, especially rural poverty, is another challenge. Poverty affects women more than men as women have limited access to resources, be it food and nutritional security, or health care and public services, apart from the skewed ownership of assets.

- *Rapid Urbanisation***:** While bringing a range of economic benefits, rapid urbanisation has brought with it enormous challenges, most noticeably in the form of demand-supply gaps in housing, infrastructure, employment, and other economic opportunities and services.

- *Education, Employment and Human Resource Development:* New knowledge and technologies are transforming the conventional structures of skills, work and employment. There is a need to refashion education and skill development so that the existing, emerging and future labour force has the capability and requisite opportunities to engage in appropriately gainful employment. This would also require befitting labour reforms, which the government has already embarked upon. There is also a need to invest in and enhance quality and accessibility of health care, especially for the economically weaker sections and people in vulnerable situations.

SDG 2 Hunger, Food Security, Nutrition and Sustainable Agriculture

Eradicating hunger and all forms of malnutrition, and increasing agricultural productivity are the prerequisites for lifting millions from poverty, deprivation and underdevelopment. Under-nutrition is the prime risk factor in over 40 per cent of under-five child deaths in India. Food security is influenced by a number of factors, including those that determine food availability domestic food production and the capacity to import food, as well as determinants of food access, utilisation and vulnerability. Access to food is determined by purchasing power of households, access to government programmes and gender inequality. India is amongst the world's largest producers of wheat, rice, sugarcane, milk, pulses, fruits and vegetables. Yet, improving access, utilization and reducing vulnerability remain a challenge. Vulnerability to shocks and disasters too influence food security.

Despite serious challenges, India has made significant progress in improving food and nutrition security. With nearly a six-fold increase in food grain production from 50 million tonnes in 1950-51 to more than 292 million tonnes in 2019-20, India has done well to expand food production and build stocks of food grains. Access to subsidized food has been made an entitlement and the public distribution system enables access to basic food across the country. Given the fact that 70 per cent of rural Indian households and 59 per cent of India's workforce are dependent on agriculture, the Government has prioritized strengthening agriculture through measures to improve irrigation and agri-marketing infrastructure, reduce risks through public procurement and crop insurance, and improve productivity through better yielding varieties.

Food Security

India's food security programme is the largest of its kind in the world, which provides affordable access as a legal entitlement. The implementation of the revamped Public Distribution System under the National Food Security Act (NFSA), 2013, which moved from welfare to a rights-based approach, with a coverage of around 813 million people, is a paradigm shift in the approach towards the issue of food security at the household level, for almost two-thirds of India's population. In recognition of women's central role in food security, ration cards are issued in the name of the senior female member of the household. Under the *Antyodaya Anna Yojana* (AAY), 25 million families from economically weaker sections are entitled to 35 kg of food grains per household per month while the remaining 'priority category' households get 5 kg of food grains per person per month. The food grains are distributed through a network of over 5,40,000 Fair Price Shops all over the country and at highly subsidised prices of INR 1/2/3 (1.3-5 cents) per kg, which is less than one-tenth of the total economic cost to the government.

In order to improve access to and efficiency of food distribution at such a massive scale, various reform measures have been put in place in the recent years. These include digitisation of 234 million ration card database across States/Union Territories

(100 per cent completed); computerisation of supply chain management (close to 100 per cent); *Aadhaar* seeding of ration cards, thereby enabling biometric authentication of the beneficiaries (90 per cent completed); and automation of Fair Prices Shops and installation of electronic-Point of Sales (PoS) machines (90 per cent completed). In addition to online allocation of food grains to all ration shops, there are online grievance redressal systems, toll-free helplines and transparency portals for the entire country. Further, India has launched the 'One Nation One Card' scheme in 2020 which enables beneficiaries to get access to subsidised grains from anywhere in the country. This ration card portability will provide a major boost to the food security system and benefit over 130 million migrant population.

Nutrition Security

India has addressed the issue of food access to a large extent, however, undernourishment remains a challenge, indicated by the high prevalence of stunting and wasting amongst children under the age of five. Such undernourishment is on account of complex interactions of several factors like sanitation, genetics, environment and food intake. India accords high priority to the issue of malnutrition and implements several schemes and programmes to address the same, such as *Anganwadi* Services, *Pradhan Mantri Matru Vandana Yojana* (PMMVY) and the Scheme for Adolescent Girls (SAG) under the umbrella Integrated Child Development Services Scheme (ICDS) to address the problem of malnutrition among women and children in the age group 0-6 years. The *Anganwadi* Services scheme provides a package of six services including supplementary nutrition, pre-school non-formal education, nutrition and health education, immunization, health and referral services. These services operate through 1.38 million *Anganwadi* Centres, benefitting 79.6 million people of which 64 million are children under six years of age and 15.6 million are pregnant women and lactating mothers. Pre-school education is provided to 28.5 million children of 3-6 years of age. In addition, the Reproductive, Maternal, Newborn, Child, Adolescent Health and Nutrition programme (RMNCAH+N) under National Health Mission (NHM) is also implemented to reduce malnutrition across the life cycle.

In a renewed focus on synergised efforts to battle stunting, wasting, anaemia and malnutrition among children, the *Poshan Abhiyan* (National Nutrition Mission) was launched in 2017. This multi-ministerial convergence mission aims to mount a concerted attack on stunting, under-nutrition, anaemia and low birth weight by 2, 2, 3 and 2 per cent per annum, respectively, over a three-year timeframe. It targets to bring down stunting among children in the age group 0-5 years from 38.4 per cent to 25 per cent by 2022. The prevalence of stunting, underweight and wasting among children aged 0-4 years was 34.7, 33.4 and 17.0 per cent respectively in 2018 while prevalence of anaemia in (children in the age group 1 to 4 years) was pegged at 40.5 per cent. Cooked meals for children in *Anganwadi* centres and Mid-Day Meal (MDM) for school-going children are the twin pillars of improving nutrition and education related outcomes. The MDM Programme in the public sector schooling system is also one of the world's largest programmes of supplementary school nutrition which ensures access to nutritious cooked meals to 116 million children at primary and upper primary level.

Agricultural Productivity and Farmers' Income

With more than 85 per cent of farmers belonging to the small and marginal categories, India has been implementing a multi-faceted strategy for doubling farmers' income by 2022 by focusing on seven growth factors. These are: improved crop productivity, increased livestock productivity, cost-effective production processes, increased cropping intensity, crop diversification favouring high-value crops, access to better prices and shifting to non-farm occupations. As 55 per cent of India's gross cropped area are rain-fed, food production has high vulnerability to climate change. The National Mission on Sustainable Agriculture (NMSA) and other allied Missions under the comprehensive National Action Plan on Climate Change (NAPCC) strive to mitigate the effects of climate change by building climate resilient agricultural practices. Under NMSA, 224 million soil health cards have been distributed to farmers for crop-wise nutrient management recommendations for enhancing soil fertility. Land under certified organic farming has increased by about 2.5 times from 0.72 million hectares in 2013-14 to 1.78 million hectares by 31st March 2018. India's agricultural productivity has been on the rise: to 2659 kg/ha for rice and 3507 kg/ha for wheat in 2018-19, from 2391 kg/ha for rice and 2750 kg/ha for wheat, respectively, in 2014-15. This marks an increase of 11 per cent and 28 per cent respectively, for rice and wheat.

A host of interventions are in place for boosting agricultural productivity. Improved water efficiency

with the motto of *Har Khet Ko Paani* and 'Per drop more crop' is being driven under *Pradhan Mantri Krishi Sinchayee Yojana* (PMKSY), which provides end-to-end solutions in the irrigation supply chain, viz. water sources, distribution network and farm-level applications. Efforts have been made to revamp crop insurance support for minimising farm losses, proving subsidised credit and ensuring single-window comprehensive risk coverage for crops under *Pradhan Mantri Fasal Bima Yojana* (PMFBY). The increase in minimum support price for all kharif and rabi crops, at least by 150 per cent of the cost of production, has also shored up farmers' income. Additionally, *Pradhan Mantri Kisan Yojana* guarantees a minimum support of INR 6,000 per year to 125 million eligible farmers. Focusing on the agro-value chain, the *Pradhan Mantri Kisan Sampada Yojana*, finances the establishment of mega food parks, agro-processing clusters, integrated cold chain and other value addition infrastructure.

Monitoring Progress at the National and Sub-National Levels

While measuring the country's performance on the SDG India Index and Dashboard, for SDG 2 and its disaggregated seven national indicators, the overall Index Score for the country is 35 and ranges between 22 and 76 for the States, and between 12 and 73 for the UTs, on a scale of 0-100. This indicates that the distance to target covered so far by India in Zero Hunger remains 35, with a significant variation among the sub-national units.

Challenges and Way Forward

- While almost 11.4 million hectares have been brought under micro-irrigation in 2019, and average productivity of fruits and vegetables has increased by about 11 per cent between 2013-14 and 2017-18, food wastage remains a challenge, at harvest, post-harvest, distribution and storage stages. Such food could be salvaged by withdrawing it in time from the distribution network, aggregating it and then redirecting it to the people in need. Social structures also determine food availability, especially for women, whose nutritional requirements are often overlooked.

- India continues to combat high levels of malnutrition, stunting and anaemia. NFHS-4 (2015-16) points out that almost half of the pregnant women aged between 15 and 49 years are anaemic and more than one-third of women

have a low Body Mass Index. Among children younger than five years of age, prevalence of detrimental undernourishment conditions like stunting and wasting remains a challenge. Food security and nutrition related challenges in India are modulated by a number of factors such as access to nutritious food, water and sanitation, micronutrient deficiencies and inadequate awareness.

- With climate change looming large on the horizon, a fundamental measure to sustain food security is climate-smart agriculture. Challenges remain for wider adoption of climate-adaptive sustainable agriculture practices, new technology and development plans involving large swathes of land cultivated by small and marginal farmers, who constitute about 85 per cent of all farmers, but often lack necessary assets and resources. In addition to sensitization and capacity development, their access to technology, financial inputs and services like insurance, advanced weather-forecasting systems and appropriate agricultural extension support will be essential.

SDG 3 Good Health and Well-being

India has made remarkable progress in providing universal access to affordable healthcare solutions with special emphasis on groups in situations of vulnerability. An array of initiatives, primarily under the National Health Policy, 2017, have been instrumental in achieving considerable progress in several areas – improving child and maternal health, reducing mortality, raising life expectancy and strengthening the defense against major communicable diseases. As the largest supplier of vaccines and generic drugs, India is widely acknowledged as the 'pharmacy of the world'. Globally, maternal mortality has fallen by almost 50 per cent since 1990 and measles vaccines have averted nearly 15.6 million deaths since 2000. On the other hand, the risk of death from non-communicable diseases remains high at 18 per cent. Challenges persist in the battles against HIV/AIDS, malaria and tuberculosis. The global pandemic COVID-19 has thrown open India's health systems to multifarious challenges, which the country is combating with ground-breaking synergies among industry, civil society and different levels of the government. India's focus primarily has been on universalizing preventive healthcare, ensuring primary healthcare affordability and ramping up modern medical

infrastructure. Special interventions have been rolled out for improving the health status of women and children, and for preventing communicable and non-communicable diseases.

Universal Health Protection and Affordable Healthcare

The launch of the world's largest health protection programme, *Ayushman Bharat* and its two components, facilitate inclusive health care to at-risk communities. Health and Wellness Centres (HWC), provide comprehensive primary health care (1,50,000 HWCs are planned to be set up by 2022, of which 39,039 are already functional); *Pradhan Mantri Jan Aarogya Yojana* provides health cover to 100 million vulnerable families up to INR 500,000 (USD 6,666.7) per family per year for secondary and tertiary hospitalisation. Since its implementation in 2018, *Ayushman Bharat* has reached close to 10 million beneficiaries, who have benefitted from cashless treatment worth INR 134 billion (USD 1.8 billion). About 61.4 million women have accessed services of HWCs accounting for 54 per cent of the total footfalls. Out of the 1393 Health Benefit Packages (HBP) under PMJAY, 116 are female centric, 64 are only for males and 1213 are common for both.

With a significant increase in access to State supported healthcare, the out of pocket expenditure (OoPE) as a percentage of total health expenditure has declined from 64.2 per cent in 2013-14 to 58.7 per cent in 2016-17. The *Pradhan Mantri Jan Aushadhi Pariyojana*, under which quality medicine is supplied at affordable prices, has played a big role in reducing the OoPE of patients. In addition, availability of free drugs and a basket of diagnostic services at the district and sub-district levels across the country under the Free Drugs Service initiative has also helped significantly in cutting down OoPE. Hastening the pace towards universal healthcare, India aims to increase primary healthcare expenditure from the current level of 52.1 per cent to two-thirds of total public health expenditure. These initiatives, in conjunction with *Ayushman Bharat*, have made unprecedented strides in providing affordable healthcare to the poor and vulnerable in the true spirit of 'Leave No One Behind'.

Enhancing Medical Infrastructure

India has a doctor-population ratio of 1:1456, against the WHO benchmark of 1:1000. To address the challenge of shortage of doctors, India has embarked on an ambitious programme for upgrading health infrastructure - from district hospitals to medical colleges. Since 2014, 141 new medical colleges have been sanctioned and with an increase in the intake capacity of medical students.

Reducing Maternal Mortality Ratio

India has reduced Maternal Mortality Ratio (MMR) by 6.15 per cent - from 130 in 2014-16 to 122 in 2015-17, which puts it on track to achieve an MMR of less than 70 by 2030. The implementation of the Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) strategy, with interventions across the life stages of women and children, and focus on addressing inequitable healthcare delivery for groups in situations of vulnerability, has had a profound impact on the maternal health situation. NHM has also led to the creation of a million strong workforce of frontline workers - Accredited Social Health Activist (ASHA) directly involved in preventive, promotive and service delivery activities.

Further, institutional deliveries doubled between 2005-06 and 2015-16 from 39 per cent to 79 per cent, increasing by 21 percentage points in urban and by 46 percentage points in rural India.

A record of 94.3 per cent of all reported deliveries in India in 2019-20, took place at a health institution. Key initiatives under maternal health including *Janani Suraksha Yojana* (conditional cash transfer for institutional delivery), *Dakshata, LaQshya* (quality of care around child birth) have played a huge role in this improvement.

Reducing Neonatal and Under Five Mortality

Infant Mortality Rate (IMR) declined from 37 to 32 between 2015 and 2018. Under-5 Mortality Rate has declined, as well, in recent years, from 43 in 2015 to 37 in 2017. The reduction has been more for girls (by 13.3 per cent) than for boys (by 10 per cent). Neonatal mortality rate also declined by 8 per cent from 25 to 23 during this period. The percentage of children aged 12-23 months who have received all basic vaccinations increased from 44 per cent in 2005-06 to 62 per cent in 2015-16. The coverage of immunization in children aged between 9-11 months has increased by about 3.1 percentage points, from 88.66 per cent in 2016-17 to 91.76 per cent in 2018-19. The progress is largely attributed to the Integrated Child Development Services (ICDS)

Scheme, one of the world's largest programmes which provides an integrated package of services for the holistic development of children, and Mission *Indradhanush*, a focused initiative for universalising immunization.

Eliminating Communicable and Non-Communicable Diseases

The National Vector Borne Disease Control Programme (NVBDCP) leads India's fight against communicable diseases such as polio, malaria, TB and lymphatic filariasis. India achieved poliofree status in 2014. Among the 11 most malaria- affected countries globally, India showed a continuous reduction in reported cases during 2016-18 - 60 per cent in 2016-17 and 51 percent in 2017-18. As far as lymphatic filariasis is concerned, there has been steady progress in terms of reduction in infection levels below the threshold in 37 per cent of all districts. An accelerated plan' is being implemented to make India free of lymphatic filariasis by 2021. With respect to TB, India has been able to improve notification of cases, which grew by 16 per cent in 2018. At the same time, there has been a decline in the incidence of cases (per 100,000 population) from 217 cases in 2015 to 204 cases in 2017 – a decline of 6 per cent, thereby consistently moving towards complete elimination of TB by 2025. The emphasis on water and sanitation, especially through the Swachh Bharat Mission, has had an appreciable dent on spread of communicable diseases.

India, with the third largest HIV incidence in the world, has 2.14 million people living with HIV. While the HIV prevalence in India stood at 0.22 per cent in 2017 (0.25 per cent among males and 0.19 per cent among women), new HIV infections per 1000 uninfected people declined by 12.5 per cent, from 0.08 in 2015 to 0.07 in 2017, primarily attributable to the National AIDS Control Programme (NACP). India is among the first few countries to set specific targets and indicators to bring down the burden of NCDs based mortality by 25 per cent by the year 2025. India's response to NCDs has been robust with the expansion of National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) to the entire country. The Mental Healthcare Act came into being in 2017, which has adopted an entitlement approach to delivery of mental healthcare and services, which also improved the awareness on mental health.

Monitoring Progress at the National and Sub-national Levels

While measuring the country's performance on the SDG India Index and Dashboard, for SDG 3 and its disaggregated eight national indicators, the overall Index Score for the country is 61, and ranges between 29 and 82 for the States, and between 50 and 71 for the UTs, on a scale of 0-100 This indicates that the distance to target covered so far by India in Good Health and Well Being remains 61, with a significant variation among the sub-national units.

Challenges and Way Forward

As the world's second-most populous country, India faces a number of challenges in the health sector.

- **Affordability and the cost of healthcare:** The private sector is a significant player in healthcare. Paucity of regulation in the private sector and the consequent variation in quality and cost of services continues to be a challenge. Although healthcare offered by the public sector comes at low or no cost, it is often not the first choice on account of perceived unreliability and in different quality.

- **Health workforce density:** India has one of the lowest densities of healthcare personnel. Though the number of physicians, nurses and midwives per 10,000 population increased by about 1.7 per cent, from 35.8 in 2015 to 36.4 in 2016, marking progress, India continues to persevere towards further improvement in this area.

- **Lack of Health Awareness:** While health awareness has spread considerably, major gaps still remain. Areas that particularly require attention include child and adolescent health, sexual and reproductive healthcare, food and nutrition, lifestyle aspects, geriatric morbidity and care, and mental health. Causes are diverse-inadequate preventive care and patient counseling in the health delivery system, lower public priority to health concerns and weaker links between education and health.

The health system has geared up with exemplary resilience to manage the COVID-19 pandemic, with effective containment, treatment, surveillance and tracking systems, as is evident in the way in which India has been managing the crisis. The response of the public health system across the country and the services of frontline workers have been diligent

with implementation of effective strategies for containment, tracking, testing and treatment to keep the crisis from flaring. Significant strides have been made in increasing life expectancy and reducing the threats associated with child and maternal mortality. However, further impetus is required to fully eradicate a wide range of diseases and address different persistent and emerging health issues.

India has a rich tradition of alternative medicine, which needs to be researched and tapped into as a part of the mainstream healthcare system. The Government has proposed to set up an Ayurveda hospital in each district with the assistance of the Ministry of Ayush (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy).

Leveraging technology is transforming the public health scenario in India. It is, for example, connecting remote areas with national centers of excellence or patients in villages with doctors in hospitals in urban areas through measures like tele-medicine. Technology can further break distance barriers, by providing swifter solutions through better diagnostics and e-payment services, thereby truly universalising access to the best of diagnostics, tele-medicine and other

healthcare services. There are ample opportunities for the private sector to support health promotion and disease prevention activities under public–private partnerships and through corporate social responsibility initiatives. Engaging the private sector in a creative and positive manner as partners for health action coordinated by the government, can go a long way in addressing health challenges in the next decade and beyond.

SDG 6 Clean Water and Sanitation

India is home to more than 17 per cent of the world's population, which depends on 4 per cent of the planet's freshwater resources. By 2030 water demand in the country is estimated to be twice the available water supply. On the sanitation front, India had been fighting the battle against open defecation for decades. In 2014, less than half of Indian households had access to sanitation facilities and only 30 per cent of the waste water and sewage originating in urban areas were treated. Until five years back, an estimated 0.4 million children under five years of age succumbed to water-borne diseases annually. Since 2014, India has been implementing a well-targeted and time bound strategy to transform the state of sanitation in the country. While significant progress has been achieved in recent years, this is a continuous endeavour.

Safe and Affordable Drinking Water for All

The Government of India is committed to providing safe and adequate drinking water in all habitations by 2022. A new and unified ministry – the Ministry of *Jal Shakti*, has been constituted to ensure effective water governance and comprehensively address water management challenges. As of July 2019, as many as 81.02 per cent rural habitations have been saturated with access to 40 litres of drinking water per capita per day (LPCD) and another 15.71 per cent with partial access. About 96 per cent of households have access to an improved source of drinking water. The country aims to supply every rural household with piped water at the rate of 55 LPCD by 2024 under the recently launched *Jal Jeevan Mission* (Water as Life Mission). This flagship programme aims to reduce the travails of rural women of travelling long distances for water.

Besides ensuring full access to water for all, robust measures are being taken to optimize water resource endowments in the country. The recently launched campaign of *Jal Shakti Abhiyan* aims at improving water conservation, rainwater harvesting, renovation of traditional and other water bodies, reuse of water and recharging of structures, watershed development, and intensive afforestation through broader community mobilisation and participation to achieve a water-secure future for the country. The campaign has undertaken over 3,50,000 water conservation measures in 256 districts, with participation of an estimated 26.4 million people, thereby transforming it into a people's movement.

Water Quality

Salinity and contamination are major ground water quality issues. While, water salinity affects 212 districts and the presence of nitrates impact 386 districts, several districts have multiple toxic contaminants in their ground water. Surface water pollution is a challenge as well. Across the country, 351 polluted river stretches have been identified on 323 rivers. A comprehensive multi-pronged strategy has been implemented to monitor and remedy water quality by the Central Water Commission, which assesses water quality at 552 key locations and covers all major river basins of the country. The Central Ground Water Board monitors the chemical quality

of ground water through a network of about 15,000 observation wells located all across the country. Polluting industries are identified and effluents are monitored in conjunction with implementation of control and compliance measures. Several programmes are implemented under the National River Conservation Plan to clean the rivers - a leading one being the *'Namami Gange'*, which is an Integrated Conservation Mission launched to accomplish the twin objectives of effective pollution abatement, and conservation and rejuvenation of the river Ganga.

Sanitation and Hygiene for All

India remains committed to creating healthier communities by increasing access to improved sanitation and hygiene. The flagship initiative of the *Swachh Bharat* Mission (SBM or Clean India Campaign) has successfully achieved the target of making India open-defecation-free (ODF) by constructing over 109 million household and community toilets since October 2, 2014 in 6,03,175 villages in 706 districts across the country. Percentage of rural households with individual household toilets increased from 38.7 in 2014-15 to 100 in 2019. Similarly, percentage of urban households with individual household toilets rose from 88.8 to 97.22 during the same period. The use of toilets has also dramatically increased over the last five years with 97 per cent of rural households using them, as per independent third-party evaluation surveys. The Clean India Campaign succeeded in effecting a behavioural transformation by creating a nudge which resulted in widespread awareness to shift towards better sanitation and hygiene facilities.

The programme also focused on conversion of unsanitary toilets to pour-flush toilets, municipal solid waste management, raising awareness and nudging positive behavioural change. The improvement in sanitation has had a positive influence on the life and health of women and girls. Increase in proportion of households with toilets has been found to have a positive impact on the safety of women. There are remarkable positive linkages of sanitation with health and nutrition outcomes, and educational attainment of women. As part of SBM, separate toilets for girls have been built in 97.43 per cent schools across the country, which has contributed, among other factors, to improved enrolment and retention of girls in primary education.

Monitoring Progress at the National and Sub-National Levels

While measuring the country's performance on the SDG India Index and Dashboard, for SDG 6 and its disaggregated seven national indicators, the overall Index Score for the country is 88 and ranges between 69 and 96 for States, and between 61 and 100 for UTs, on a scale 0-100. While the floor of performance is relatively high, there is significant variation across States, pointing to the need for identifying and acting upon the factors responsible for such divergence.

Challenges and Way Forward

- Significant progress towards realising this goal has been made and the country consistently endeavours to overcome the associated challenges. Localised data systems on water, which are characterised by limited coverage and coordination, is one such significant challenge.

- Entrenched mindsets and practices leading to gendered access to sanitation facilities continue to create hurdles. Paucity of public toilets, maintenance of gender-specific facilities and water scarcity, often modulate and restrict usage by women and girls. Separate toilets in schools, colleges, and workplaces have substantially increased, but in several instances, their usage is constrained by water scarcity and insufficient maintenance.

- While targeted interventions to improve the conditions of sanitation workers have been escalated, several aspects need further addressal. Re-skilling, workplace improvement and self-employment avenues for sanitation workers have become the areas of policy focus.

- India has put in place a 10 Year Rural Sanitation Strategy (2019-2029), which focuses on sustaining the sanitation behaviour change, ensuring that no one is left behind, and increasing access to solid and liquid waste management. This strategy lays down a framework to guide local governments, policy makers, implementers, and other relevant stakeholders in their planning for ODF Plus, where everyone uses a toilet, and every village has access to solid and liquid waste management. Improvement in the water and sanitation management systems remains a priority area at the national, subnational and local levels. ❑

Let's Innovate to Provide Optimal Healthcare

M Venkaiah Naidu, Hon'ble Vice President of India delivered the Convocation Address at the Convocation Ceremony of the University College of Medical Sciences, New Delhi on September 25th, 2021. He said, "The goal of universal and assured healthcare for all is difficult, but with determined efforts, we can achieve it. The first step to achieve the goal of 'Health for All' is to increase public spending on health. At the same time, we need to ensure that the quality of medical education is not compromised and high standards are maintained." Excerpts

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It is indeed a privilege to be present today at the convocation of the University College of Medical Sciences (UCMS) in its Golden Jubilee Year. At the outset, I wish to congratulate the students who have reached an important milestone in their education and today's awardees for their academic achievements. I would like to convey my appreciation to teachers who nurtured the students to be proficient in their disciplines and imparted the necessary skills and competence in them to become professionals. More importantly, they have been equipped to cater to the healthcare needs of India. Today's convocation is special as it is being held in the Golden Jubilee year of UCMS. My compliments to the present and past administrations and the staff of this prestigious institution for pursuing excellence in medicine for the last 50 years. May you continue to excel in education and research in the coming decades too! The COVID-19 pandemic has highlighted the importance of a robust, accessible and affordable health care system. The formidable fight India has put up against the pandemic is a testimony to the resilience of our people in general and the selfless service rendered by all the doctors, healthcare personnel and other frontline workers in particular. Our scientists and vaccine manufacturers need special appreciation for rising to the occasion and ensuring the availability of vaccines to millions of Indians.

Sisters and Brothers, Various health indices have improved considerably in the country since Independence. Life expectancy at birth has increased, infant and maternal mortality have greatly reduced. Diseases such as smallpox and polio have been eradicated, while leprosy is close to being eliminated. As per the latest available data, MMR has seen a steep decline in recent years, falling from 130 per one lakh births in 2014-16 to 113 in 2016-18. With Prime Minister, Shri Narendra Modi calling to make India TB-free by 2025, five years ahead of the global target of 2030, we have been making steady progress in reducing the incidence of the disease.

There has also been a significant increase in the coverage of immunization through the Universal Immunization Programme. While these are laudable achievements, we still have many challenges that require a coordinated and concerted approach by both the government and the private sector. These challenges pertain to low public investment, inadequate infrastructure in rural areas when compared to cities and towns, shortage of doctors, nurses and trained healthcare workers and prevention of non-communicable diseases. There is also the problem of high out-of-pocket expenditure, which adversely affects the low-income households that face the risk of being pushed to poverty. It would be pertinent here to point out that the government's flagship scheme, Ayushman Bharat' has brought 'health assurance' to many poor families for secondary and tertiary care hospitalization. With a cover of up to ₹5 lakh per family per year, it has covered more than 2 crore hospitalizations since the launch of the scheme. Sisters and brothers, The goal of universal and assured healthcare for all is difficult, but with determined efforts, we can achieve it. The first step to achieve the goal of 'Health for All' is to increase public spending on health. The 15th Finance Commission has recommended that states should increase spending on health to more than 8% of their respective budgets by 2022 and the public health expenditure of the Centre and States together should be increased in a progressive manner to reach 2.5 percent of GDP by 2025.

As mentioned earlier, the shortage of trained human resources in healthcare needs to be addressed on a war footing. India has a low doctor to population ratio, at 1:1,511 against the WHO norm of 1:1,000. While there are more than 540 medical colleges in the

country, we need to establish more of them, both in the government and private sectors. At the same time, we need to ensure that the quality of medical education is not compromised and high standards are maintained. The Prime Minister, Shri Narendra Modi has already declared the government's intention of setting up one medical college and hospital in every district of the country. Unfortunately, there is also a paucity of paramedical staff - nursing professionals, midwives, medical technicians, among others. We have a nurse to population ratio of 1:670, falling short of the WHO norm of 1:300. We need to correct this situation in a mission mode.

In view of the shortage of manpower in the rural areas, I had suggested the need to make rural service mandatory before giving the first promotion to young government doctors. By establishing more state-of-the-art hospitals, better incentives, and improving housing and infrastructure for the medical community, we need to attract more doctors to the rural areas.

Sisters and Brothers, While focusing on the need to turn out more doctors, we must not forget the critical role of trained paramedical personnel in saving lives. The importance of the service they render came to the fore during the pandemic as they worked tirelessly over the past year. Indian nurses and paramedical staff have earned a great reputation globally over the years with their skills, dedication and caring nature. The need of the hour is to leverage this innate skill among our youth to train more allied healthcare workers and assign a larger role for them in our public health. The 15th Finance Commission has recommended allocating more than Rs. 13,000 crore for the training of allied healthcare workers. This is expected to create an additional 15 lakh workforce. Universities such as yours need to offer more short-term diploma courses for paramedics. Friends, While seeking to improve the physical infrastructure and the manpower, we also need to innovate to provide optimum healthcare within the available infrastructure to one and all. For instance, eHealth or 'digital health' has come up in a big way in recent years. Using these services, people in rural and remote areas can consult and interact with a doctor in a virtual or telephonic mode. This will also mitigate the problem of paucity of doctors in rural areas. eHealth can also empower women and bring about much-needed awareness on maternal health and other issues.

The Ministry of Health has brought out many e-Health initiatives in recent years such as National Health Portal, e-Hospital, Mera Aspatal and a variety of mobile applications such as mCessation, mDiabetes and Kilkari. While these efforts are in the right direction, we need to further popularize and scale-up e-health initiatives. With increasing internet and smartphone penetration in rural areas, e-health is the way forward for the optimum use of our human resources in healthcare. While India is going through a digital revolution, we must capitalize on it and bring about a revolution in healthcare. On a similar note, the idea of 'digitized health records' will save the hassle of paperwork for people and bring about a smooth and seamless experience during hospital visits. The Prime Minister is expected to launch the Pradhan Mantri Digital Health Mission in a few days. A unique digital health ID will be provided to the people, which will contain all the health records of the person. While ensuring the safety and privacy of health data, this digitization will greatly help to monitor diseases and enable quicker decision-making. This is a commendable initiative and should be rolled out in all states soon. Friends, The COVID-19 crisis is far from over. India is implementing the world's largest vaccination drive and the aim is to complete the vaccination for all eligible people at the earliest. Civic groups must join hands with the local governments and encourage people to get vaccinated. There is also a need to dispel fears and false beliefs on vaccination and the media must take the lead in educating people and creating awareness on the safety of vaccines. It is also important to follow COVID-19 protocols with utmost seriousness. We cannot be complacent and invite a third wave. Finally, I would like to compliment UCMS for its contribution to medical education. UCMS and the associated Guru Teg Bahadur hospital have also been rendering a great service in the management of the COVID-19 crisis over the past year. I am told that a newly set up ICMR-recognized virology research & diagnostic laboratory has already performed almost 38,000 RTPCR Tests for COVID-19 detection so far. I compliment the administration for these achievements and urge them to carry the same spirit of excellence in the coming years. Once again, my best wishes to the students, parents and the teachers for their tireless efforts, which culminated in today's momentous ceremony. My best wishes for your future endeavors!

Jai Hind!"

Book Review

Focus on Solutions for Real Life Problems

Dhrubajyoti Chattopadhyay*

Chatterjee, Soumitra (2021). ***FAITH: Stories and Strategies to Conquer COVID,*** First Edition, White Falcon Publishing,198 pages, Rs. 299/-

The book shares the stories and strategies to conquer COVID from the perspective of Mr. Soumitra Chatterjee. The book is a bible for all of them who are in constant fear of COVID and are trying to get rid of this fear.

The book narrates the experiences of the author during the COVID situation and makes us understand that at times we think so excessive that that fear of excessive thinking become bigger than the fear of having COVID. The book explores the optimistic side of the power of faith, the power of focus and most importantly necessity of asking questions.

The book translates our old taught thoughts about believing that we have to fight till our last breath and to believe in the power of dreams. The book portrays some life learning from some notable real life heroes like Lech Stanislavsky, Wilma Rudolph, Ed Roberts, Nelson Mandela, Arunima Sinha and many others.

The book shows that we are not fighting this battle alone; many others have fought severe critical situations and have demonstrated the ability to move ahead. The life learning shows people from various backgrounds, various challenges who have overcome those hurdles and have made way to reach their objectives of life.

The book is divided in two sections; section one share stories and quotes of the real life heroes and section two emphasizes of how building up small things in life can make life better and a big success. It starts with the power of meditation which is a great power by itself and if utilized to the fullest potential can work miracles. Unfortunately India which is a land of sages and incarnations of various God and Goddess has shown us the way long before which we have shunned for the glamor and comfort of the so called modern life. This book reminds us about that power which will lead in building up of an extraordinary psychology combined with the ability to pay for gratitude. To have humbleness is great and it is said even if one who has got all the wealth and power of the world, if the person is not humble, the person is sure to be in a jumble. That is the sole reason as to why the richest men or women in the world get involved in so much philanthropic activities, just to ensure that they give to the ecosystem something back from which they have taken so much.

What I liked the most about the book is its focus on real life problem solutions by making us understand the necessity of developing problem solving skills, developing good habits in life, benefit of having good health and the power of visualizations and affirmations.

The book also emphasizes on faith and prayer. Faith and Prayer often go hand in hand. Often we pray but without faith, which actually is just not the case. When we pray to the Supreme Almighty, it means that we surrender to its natural forces and have faith that whatever will be the impact of those forces will be for good and go on performing our routine jobs. But often we pray but do not completely surrender or put our faith on the Almighty or stop working. One should understand that there are certain factors on which no one can control and doing anything beyond that will call for a disaster. Hence we should stop comparing (not the healthy comparison) with others and understand that we build our life in disciplined manner which will help in solving most of the problems. This book is a starting point to that approach and will help a lot in developing and nurturing ourselves.

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CAMPUS NEWS

Academic Conclave on Health Management during the Pandemic times

The Pandemic is not yet gone. "Unfortunately… we are now in the early stages of a third wave". "The Delta variant is now in more than 111 countries, and we expect it to be soon the dominant COVID-19 strain circulating worldwide if it isn't already, "said World Health Organisation (WHO) Chief Tedros Adhanom Ghebreyesus. Against this warning, we need to revisit our lives locked up at home for nearly two years. The emotional, social and intellectual health housed in our physical health have had a serious beating. The 10,000 steps average walking of the adult, jogging, pranayama in the fresh air, eating with hunger due to poor physical activities have all been shelved.

For our inclusive well being, it is necessary to understand the scientific practices of healthy self- care. Only qualified, experienced medical professionals can advise us. Keep in mind this emergent situation, Educational Technology and Management Associations (ETMA's) recently organized an Education Conclave on Health Management during the Pandemic. The Conclave head a distinguished panel of experts to address this issue of vital concern for all of us.

Prof. Madhu Parhar, Chairperson of the conclave, greeted the participants and experts. She introduced the three distinguished speakers, Dr Prabhat Maheshwari, Dr Paritosh S Gupta and Dr Rajesh Acharya. For information's sake, the first speaker, Dr Prabhat Maheshwari, MD, DNB, MRCPCH (London), is a Paediatrician and Neonatologist with vast working experience in India & the UK. He is an expert in Paediatric Infectious diseases. He is a National examiner for the Paediatric Intensive Care Fellowship Program of the Indian Academy of Pediatrics. The second speaker, Dr Paritosh S Gupta, MBBS, MS, DNB, is a Head of the Department of General, Min Access & Bariatric Surgery at Artemis Hospitals, Gurgaon, India. He has an impressive record of 14,000 successful surgeries. He has vast experience in all kinds of abdominal surgeries and Gastrointestinal surgeries. The third or last speaker, Dr Rajesh Acharya, MCH, MBBS, MS, is Senior Consultant & Co-Chairman,

Department of Neurosurgery, Sir Ganga Ram Hospital in New Delhi; he is working at SGRH for the past 25 years. He is also a Professor at the Ganga Ram Institute of Post Graduate Medical Education and Research. He is skilled in Skull Base, Stereotactic, Cranio-Vertebral Junction & Spine Surgery, and Surgery for Epilepsy. Dr Acharya is also an ETMA council member.

After the brief introduction, Prof Madhu Parhar invited Dr Prabhat Maheshwari to present.

Dr Maheshwari presented the management of COVID-19 in different age groups and then some general issues about health management during the Pandemic. Everybody is indeed affected by this Pandemic over the last one and half years; it has affected the health and affected the whole lifestyle. It can affect any age group ranging from neo natal to old, even before the birth fetus in the womb. As per the latest count in India, there are more than 31 million, and reported deaths are 4.2 lakhs. More than 40,000 new cases are being added every day.

Dr Maheshwari divided the manifestation of symptoms into four categories. These are Asymptomatic, Mild, Moderate and Severe.

Asymptomatic

As the name indicates, there are no symptoms like fever, cough, breathlessness or other organ symptoms. Suspected contact with other COVID-19 patient and incidentally detected [RAT/RTPC R positive].

Treatment:
- No medication required
- Medicines for other comorbid conditions to continue
- Hydration and N utrition
- Prevent spread
- 6-minute walk test
- No investigation needed
- Home Isolation

Dr Maheshwari described how to conduct a 6-minute walk test as follows

- A 6-minute walk test is an established simple clinic altest to assess cardiopulmonary exercise tolerance. This test is used to unmask hypoxia.
- A patient with a pulse oximeter attached to his finger is asked to walk in the confines of his room for
- 6 minutes continuously.
- Any drop in saturation below 94%, or an absolute drop of more than 3% to 5% or feeling unwell (lightheaded, short of breath) while performing the test or at the end of 6 minutes are significant findings. Such patients are labelled as positive for the 6-min walk test.
- Patients with a positive 6-minute walk test may progress to become hypoxia, and hence early admission to the hospital [for observation and oxygen supplementation] is recommended.
- The test can be repeated every 6 to 8 hours of monitoring in the home setting.
- It should not be done inpatients older than 70 years, those with uncontrolled asthma, pregnant patients.

Mild

There is no shortness of breath; the respiratory rate is less than 24 per minute, and saturation is more than 94% in room air. This type of patient can be very well managed at home.

Treatment:

- Antipyretics and antitussive as needed
- Inhalational Budesonide (MDI) 800 mcg BD for five days
- No other medicine needed
- Self- monitoring (Fever, SpO2, breathlessness)
- 6-minute walk test
- No routine investigation needed

Moderate

Very pronounced symptoms like Shortness of breath, Respiratory rate: 24-30, SpO2: 90-93% on room air. Should to admit to the hospital.

Treatment: in hospital

- Oxygen support – target saturation 92-95%
- Proning
- Steroids
- Anticoagulation

- Control blood sugar
- Supportive treatment
- Antiviral and immune modulator therapy

Sever

Symptoms are Shortness of breath, Respiratory rate >30 per minute, SpO2 < 90% on room air

Treatment:

- Oxygen support (Invasive or non-invasive respiratory support)
- Steroid therapy
- Anticoagulation
- Antiviral and Immune modulator
- Supportive management

He also spoke about a few investigations that are performed during hospitalisation. Such as CBC, CRP, Blood glucose, LFT, RFT, Ferritin, D dimer, Urine routine, Chest X-ray, HRCT chest if indicated, and Serial investigations to see progress.

He also spoke about few Drugs which is used only for moderate or severe disease in hospital settings.

Remdesivir:

- Better results, if used before seven days of illness, should not be used after 10-12 days of illness
- Monitor for liver function

Tocilizumab:

- Immunosuppressant agent for severe or critically ill patients.
- If worsening O2 requirement and C RP > 75

Essential and interesting management recently come Antibody cocktail: Regeneron.

This is a combination of monoclonal antibodies Casirivimab 1200 mg and Imdevimab 1200 mg:

- Early treatment before disease severity
- Indications
- Obese (BMI >35)
- CKD/ Diabetes
- Immunosuppressive state
- Aged 65 or more
- Age 55 or more with CAD, HT or COPD

Children's are rarely affected by COVID. If affected, very mild or asymptomatic following few points for COVID in children.

- Mostly asymptomatic or mild
- Respiratory symptoms are less frequent
- Gastrointestinal symptoms are more common
- Rarely organ failure
- Home management if mild illness
- Supportive treatment

It is being said that the third wave can become frightening in the case of children, or children will be more affected. But according to Dr Maheshwar i, there is no scientific logic behind saying this. Like the first and second waves, the third wave will affect children and adults equally.

Dr Maheshwari suggests few smart behaviours to protect oneself from COVID. These are:

- You are using Mask in the right way, but 24 hours did not need to use Mask. When you are far from a gathering or any other person, staying or driving alone, you don't need to use Mask in an open space or ground. Whenever you are in a closed environment exposed to another person either COVID positive or don't know the COVID status, use Mask.
- Maintain distance when needed
- Know which are the risk areas
- Immunity boosters have no role in COVID management for an average person; they don't need any Immunity boosters.
- Self- medication may harm like taking a lot of vitamins and zink my harmful for health.
- Indiscriminate use is of sanitisers not good. Washing hand is much better rather than using sanitiser.

Now, in India, we have three types of vaccines available. These are Covisheild, Covaxin and Sputnik. Vaccines do not have a significant role in preventing the spread of infection, but they have a good position in preventing severity and mortality. Vaccines are safe to use also.

People cannot go out of the house during the lockdown, so treatment is the primary concern. So Dr Paritosh Gupta gives some advice to identify common diseases for that people can take quick action accordingly. The joint disease and symptom is abdominal pain. Abdominal pain can be due to various reasons such as Infection Intestine, Acidity (Gastritis), Constipation, Complicated

Infection, Appendicitis, Intestinal Perforation, S tones (Gall Bladder Stones/ Urinary S tones), Obstruction, Hernia, Urine infection, Uterine Issues and Uncommon. He explains the pain, how much pain, in what part of the abdomen pain occurs and other surrounding symptoms in these diseases. A doctor or hospital must be contacted when the pain persists and is not re lived by primary medication.

Dr Gupta suggests few things to keep in the medical box.

- Medicines: Anti Spasmodic, Analgesics, Antacids, Laxatives, Fomentation, Anti Emetics
- Dressing materials : Betadine solution (No Savlon /Dettol), Sterile Gauze Pieces (Pack), Sterile Gauze Pad, Bandage 6 and 4, Gloves (2 Pairs Sterile/Unsterile), Scissors, Micropore Paper Tape 2, Crepe Bandage 6, etc.
- Hot water Bottle
- He suggests the following condition when to reach a doctor.
- Constant pain,
- Colicky pain,
- Severe/Unbearable Pain,
- Dull ache/nagging,
- If No relief with General medication
- If medicine can't be taken due to Vomiting
- Uncontrolled Pain
- Physical condition deteriorating (Pulse/Blood Pressure)
- Tele Consult
- Physical Examination/OPD consult

Dr Gupta suggests few tips and explains them in simple language, which will make it worthwhile for all of us.

Dr Rajesh Acharya speaks on general health management during COVID times. He said that children's are more vulnerable to the harmful effects of the lockdown because they are more sensitive, unable to communicate, and have limited understanding. Due to the closure of schools and playgrounds, they are becoming the victims of stress and anxiety. This pandemic lockdown affected their physical as well as mental health significantly. Health is not merely the absence of diseases; instead, it is defined as a state of complete physical, mental combination.

There is already stress and uncertainty among the students because of financial and social instability. There is a fear of infection of self and parents. They are facing boredom frustration due to the closure of the school. These all fear, stress and uncertainty causing behavioural disorders like shouting, fussy, aggressiveness, throwing tantrums, sleep disturbances, nightmares etc.

Due to hormonal change, older children/young/teenagers have amplified energy and enthusiasm. It is challenging for them to stay in isolation because they miss their parties, outings, sports, friends and relatives. They feel disappointed, frustrated and bored. Kids with special needs like Autism, cerebral palsy, OECD, Mental (MR) are at more risk. Due to quarantine and living alone, they are developing stress, depression, anxiety and adjustment disorder.

WHO, UNICEF and the governments have issued guidelines. It is the responsibility of all of us, especially doctors, psychologists, educationists, and policymakers, to reassure the child to educate them on self-distancing and hygiene. We have to acknowledge their problems and answer their doubts. Every parent has to avoid disturbing news on TV and social media and unnecessary separation from their child. For younger children, parents should spend quality time with their children. They can include music, singing, dancing and storytelling. Avoid news channels. Give children more hugs/cuddles and make them more affectionate. Arrange video chat with family, friends and caregivers. Keeping the baby busy throughout the day reduces the child's stress a lot.

Routine will reduce their anxiety. To fix the time for wake up, Breakfast, Meals, S leep, P lay etc., engage them in household chores like cooking, cleaning, serving food etc., try to avoid day naps and bright light (TV, mobile) in the evening. Early diagnosis and timely management of the effect of Pandemic in a young generation will reduce the prolonged disability. Health is wealth. The conclave ended with thanking the three doctors by Prof Parhar and Prof Mukhopadhyay.

Dr Sudesh Mukhop adhyay, Dr Mrinal Mukherjee, Prof Renu Nanda, Ms Dyutima Kesar, Mr Avaykumar Mondal, Twist Tale, Ms Sushma Sardana and Mr Salil Adak actively intervened through the chatbox.

International Web-conference on Future of Food and Agriculture

A two-day International Web-conference on 'Future of Food and Agriculture: Trends and Challenges' was organized by Shri Vaishnav Vidyapeeth Vishwavidyalaya (SVVV), Indore (Madhya Pradesh) under VAKSANA-2021 (An annual feature of the institute), recently. Over one hundred delegates participated in the event. The event was inaugurated by Conference Patron, Prof. (Dr.) Upinder Dhar, Vice Chancellor of SVVV. He welcomed the Guest Speakers, Dr. DN Gokhale, Director of Instruction (FoA), Vasantrao Naik Marathwada Krishi Vishwavidyalaya (VNMKV), Parbhani, Dr. DB Deosarkar, Director of Extension Education, VNMKV, Parbhani and Dr. Naresh Selokar, Scientist, ICAR-National Dairy Research Institute, Karnal, Haryana. Vice Chancellor in his inaugural address spoke about 2030 Agenda for Sustainable Development Goals. He said that sustainable development is a universal challenge and the collective responsibility for all countries and goes beyond the divide of 'developed' and 'developing' countries.

Dr. KN Guruprasad, Organizing Chairperson and Coordinator, Shri Vaishnav Institute of Agriculture, Indore also welcomed the Chief Guests and participants of the web conference. He, in his welcome address said that agriculture sector is the backbone of the economy of any country. India needs a substantial boost in agriculture production to meet the present and the future challenges. Use of scientific advances, in particular the advances made in molecular biology and their safe deployment is of great importance.

Dr. DN Gokhale delivered his speech on 'Socio Economic Impact and Impact Dynamics of Bt. Cotton in India'. He concluded that we need technology that contributes to increasing yields. Indian farmers face numerous uncertainties and crop management challenges, which affect farm yields and incomes. And knowledge of cultivation and correct agronomic practices, make a significant impact. It would also be worthwhile to note that GM seeds have helped conserve biodiversity with higher productivity from limited acreage, thus the expansion of agricultural land into forest areas has been greatly curtailed in several countries.

Dr. D B Deosarkar spoke on 'Cotton Improvement: Special reference to *desi*, *hirsutum* and *barbadense* Cotton'. He reported that a cotton variety NH 615 (*G. hirsutum*) is found suitable for HDPS (High Density Planting System) and organic cotton cultivation particularly under shallow soils. The public sector hybrids have been already converted into transgenic cotton. And CICR, Nagpur is converting *G. hirsutum* and *G. arboreum* varieties in Bt version. The convergence programme of hybridsis already initiated under Public Private partnership with Maharashtra State Seed Corporation Ltd., Akola and NHH 44 was converted into Bt version and recommended for cultivation in Maharashtra. In future, the Bt version of *G. hirsutum* and *G. arboretum* varieties will be more helpful to fulfill the need of rainfed cotton growing farmers.

Dr. Naresh Selokar delivered lecture on 'Buffalo Cloning: A Tool to Multiply India's Black Beauty'. He concluded that India owns the best buffalo breeds, particularly *Murrah* which is famous all over the world for high milk production. India's white and pink revolution cannot be imagined without the contribution of buffalo, and to achieve these, the best productive animals need to be produced through scientific interventions. Animal cloning is a technique used to produce multiple copies of the best animals without normal reproduction. In India, buffalo cloning has already happened and India's first cloned buffalo was produced in 2009. Later, several buffalo clones were produced and attempts are ongoing to produce stock of more elite animals. Buffalo cloning has made its way from scientific manuscript to farmer's farm. In this article, he provided an overview of the progress of buffalo cloning in India.

Conference Convener, Prof. Vinod Dhar, Head, Shri Vaishnav Institute of Agriculture, Indore proposed vote of thanks. He said though, gains in productivity and technological advances have contributed to more efficient use of natural resources and improved food security but due to climate change, intensification of natural disasters and increased upsurge in the movement of pests and diseases across boundaries of different countries, the sustainability of agricultural productivity and food security is threatened. Expressing optimism, he observed that there will be use of satellites, IoT, drones for better collection of data regarding soil health, crop condition as far fertility, status of pest infestation, crop area and yield is concerned. Many startups in agriculture taken up by highly educated young ones show that they understand the potential of putting money in this sector.

World Sustainable Development Summit on Towards a Resilient Planet

A three-day World Sustainable Development Summit on 'Towards a Resilient Planet: Ensuring a Sustainable and Equitable Future' is being organised virtually by The Energy and Resources Institute (TERI), New Delhi during February, 16-18, 2022. Over the years, the Summit platform has brought together thought leaders, heads of state and government, scholars, corporates, youth groups, and civil society representatives from across the world. The Summit series has established itself as a responsible and an effective platform for mobilizing opinion-makers to identify and advance pioneering actions to address some of the most relevant issues concerning sustainable development.

The onslaught of extreme weather events around the world has brought to the forefront on how human well-being and the health of our planet are inextricably linked. Just and equitable implementation of climate and environmental policies need to go hand in hand with broader sustainable development objectives. The present state of planetary health along with pandemic driven socioeconomic crises call for a revisit on questions related to global ambition and measures for sustainable development. Responses should be viewed from the perspective of planetary resilience, and responses to the pandemic must be right for humans as well as Planet Earth.

The year 2021 started on an optimistic note with the United States announcing ambitious measures on climate action. The COP26 held in Glasgow also saw renewed momentum on aspects such as net zero commitments, energy transitions and call for ambitious global responses on adaptation, loss and damage and climate finance. Ensuring a sustainable and equitable future requires due consideration to socioeconomic dimensions of policies and implementation measures. Alongside environmental stewardship, responses need to consider distributional implications of aspects such as trade-offs in terms of resources available for poverty eradication measures, health and education to fulfil the Sustainable Development Goals (SDGs).

Thematic Tracks

In recent years, thematic tracks have revolved around crucial subjects such as key policy level interventions to reverse desertification in cities, managing plastic waste, enhancing energy distribution and deliberation on sustainable methods to improve urban planning.

For further details contact WSDS Secretariat, The Energy and Resources Institute 6C, Darbari Seth Block, India Habitat Centre, Lodhi Road New Delhi - 110 003, Phone no: +91 11 24682100 (Ext. : 2467), *E-mail: wsds@teri.res.in.* For updates, log on to: *https://wsds.teriin.org*

International Seminar on Ecosystem Functioning in Anthropocene

A three-day International Seminar on 'Ecosystem Functioning in Anthropocene' is being organized by the Centre of Advanced Study in Botany, Institute of Science, Banaras Hindu University, Varanasi (Uttar Pradesh) during February 23-25, 2022. The seminar will provide a platform for researchers working globally in above areas to exchange knowledge and share their findings. The global efforts to promote sustainable research and developmental activities and remedial measures for ecological restoration may provide ways and means for restoring ecological balance and restoring the natural functioning of ecosystems even during this human dominated era (the 'Anthropocene epoch').

The various ecosystem functions are directly linked to the well-being of humans. However, the overexploitation of natural resources by the human society has not only loaded the air, soil and water components of the environment but has also affected the ecosystems by disturbing the interrelationship and equilibrium between the living and non-living components of the environment. This has started affecting various ecological services responsible for maintaining equilibrium within and beyond the ecosystems. Out of these, the biotic disturbances are the most valuable indicators through which climate change related alterations and other adverse impacts on the ecosystem can be easily viewed and interpreted. Researchers working on various domains of ecosystem dynamics and functioning have pointed out the decline in the ecosystem sustainability, which may hamper our existence in the near future unless appropriate remedial measures are taken. The themes of the event are:

- Ecological Energetics and Economics.
- Molecular and Microbial Ecology.
- Climate Change and Sustainable Development.
- Biodiversity.
- Invasion Biology.
- Green Technologies and Nature Based Solutions.
- Restoration Ecology.
- Environmental Pollution.

For further details, contact Convener, Prof. S K Dubey, Centre of Advanced Study, Institute of Science, Banaras Hindu University Varanasi- 221005, (Uttar Pradesh), Phone No: 91-983926201, E-mail: *isefa2022@gmail.com.* For updates, log on to *:bhu.ac.in/seminar/seminar.php*

International Conference on Role of Indian Science in Freedom Movement *(Swatantra Ka Amrut Mahotsav)*

A two-day International Conference on 'Role of Indian Science in Freedom Movement' *(Swatantra Ka Amrut Mahotsav)* is being organized to commemorate Swatantra Ka Amrut Mahotsav by the Jawaharlal Nehru University, New Delhi in collaboration with Vijnanabharati, NIScPR and Vigyan Prasar during February 28 and March 01, 2022. The event is aimed to create awareness and generate scholarly evidences for the role of Indians in cultivation of modern science, development of scientific societies, institutions, industries and fighting against the British colonial rule in India.

India's freedom struggle was waged on several fronts: political, economic, social, cultural and scientific. Although, Indian scientists played a significant role in the Indian freedom movement through their meticulous work in science and technology, British left no stone unturned in undermining their work. It is important to understand that British invasion was entirely different from the earlier invasions in India as the British used science and technology to undermine the Indian culture and knowledge system. They deployed science not only to consolidate and expand their empire but also to exploit the economic resources of country. They used science as a magical tool to impress Indians to prove their civilizational superiority.

Indian Scientific Community, although was in a nascent stage, countered the colonial narratives

and strongly criticized their discriminatory and exploitative policies. In response to British rulers' undermining the significance of India's past achievements, many Indians took up the task to study India's past and showed the glorious achievements of India in field of mathematics, astronomy, metallurgy, and medicine and surgery. They mobilized native resources and established scientific institutions and societies to promote development of science and technology in India. Despite several hurdles Indian scientists used various diplomatic tactics to ensure their subtle work against the British and parallelly develop ties with scientists in other countries to promote science and technology in India. While echoing the needs for political representations they also demanded for recognition of Indian scientists and promotion of science and technology in India. The themes of the event are:

- Science and Freedom Movement.

- Establishing Colonial Hegemony through Science.

- Role of Indian Scientists and Resurgence of Indian Ethos and Culture.

- Intellectual Colonialism and Freedom Movement.

- Swadeshi Industries in Colonial time.

- Achievements of Indian Scientists and its Implication for Political Freedom.

- Emergence of Scientific Racism in India and Indian Response.

- Impact of Colonialism on Environment/ Sustainable Consumption.

- Public Engagement for Development of Scientific Institutions and Societies.

- Science Diplomacy and Freedom Movement.

For further details, contact Organising Secretary, Jawaharlal Nehru University. New Mehrauli Road, New Delhi- 110067, E-mail: *risfrem2022@gmail.com*

Online Workshop on Design of Experiment

A three-day Online Workshop on 'Design of Experiment' is being organized by the SQC and OR Unit, Indian Statistical Institute, Mumbai during April 29-May 01, 2022. The Manager, Engineers, Technologists, and Scientists from Research and Development/ Manufacturing / Process Engineering and Development may participate in the event.

Design of Experiment, or DoE is a tool to develop an experimentation strategy that maximizes the knowledge about products or processes using a minimum of resources. Sir Ronald A Fisher primarily laid the principles and foundation of statistics for DoE. The work of G. Taguchi on robust design for variation reduction had revolutionary impact on Japanese industry. Today, Design of Experiment (DoE) is widely used in all fields of Engineering, natural and social sciences. Engineers and Scientists worldwide use DoE for new product development, process improvement and variability reduction. It ensures that both planning, and execution of experiments are most efficiently managed thereby reducing development time and development cost. Today industries all over the world use design of experiments for problem solving and robust product development. The technique is also useful for establishing defect free processes through optimization of process parameters. The Course Contents are:

- Quality, Types of Data, and Probability Distribution.

- Introduction to Design of Experiments.

- Test of Hypothesis (t-test / F-test / ANOVA).

- Factorial Experiments.

- Fractional Factorial Experiments.

- Placket Burman Designs.

- Multiple Response Optimization Methods.

- Taguchi's Orthogonal Array Experiments.

- Robust Design.

- Case Studies.

For further details, contact Organising Secretary, SQC & OR Unit, Indian Statistical Institute, Mumbai Room No 320, 3rd Floor Old CGO Building 101 Maharshi Karve Road, Mumbai- 400 020 (Maharashtra), Mobile No: 09969928144 / 09869242240, Phone No: 22014588 / 22004574, E-mail: *sqcbombay@gmail.com*. For updates, log on to*: www.isimumbai.co.in* ❐

THESES OF THE MONTH

SOCIAL SCIENCES
A List of doctoral theses accepted by Indian Universities
(Notifications received in AIU during the month of Nov-Dec, 2021)

Business Administration

1. Shah, Rutvee Rutwa. **Impact of quality risk management practices on manufacturing activities of pharmaceutical companies in India**. (Dr. Viranchi Shah), Department of Business Administration, Rai University, Ahmedabad.

Commerce

1. Agrawal, Ayushi. **Women in unpaid family work**. (Dr. Sadananda Sahoo), School of Inter-disciplinary and Trans-disciplinary Studies, Indira Gandhi National Open University, New Delhi.

2. Anshu. **Financial performance and borrowers perception: A study of housing finance companies**. (Dr. Sanjiv Kumar), Department of Commerce, Maharshi Dayanand University, Rohtak.

3. Arora, Anu Priya. **Buying behaviour of young consumer towards luxury fashion brands**. (Prof. Nawal Kishor), School of Management Studies, Indira Gandhi National Open University, New Delhi.

4. Balasaheb, Deshmukh Preeti. **A study of selected agro-processing industries and its impact on socio-economic development in the area of operation with special reference to Nashik District.** (Dr Khairnar Sanjay Dharmraj), Faculty of Commerce & Management, Savitribai Phule Pune University, Pune.

5. Baljeet Kaur. **Green banking practices in India: A comparative study of banking segments**. (Dr. Rashmi Bansal), School of Management Studies, Indira Gandhi National Open University, New Delhi.

6. Mani, Kantai. **A study on job satisfaction of bank employees with special reference to State Bank of India in Bhagalpur District, Bihar**. (Dr. Devendra Kumar Singh), Department of Commerce, T M Bhagalpur University, Bhagalpur.

7. Kathiriya, Janki Ganpatbhai. **A study of productivity and profitability of Self-Employed Women's Association (SEWA) Bank Ltd and its' branches**. (Dr. Paresh Shah), Department of Commerce, Rai University, Ahmedabad.

8. Oberoi, Shelly. **Impact of emotional intelligence on team building and group cohesiveness: A study of select organizations in Delhi-NCR**. (Dr. Madhulika P Sarkar), School of Management Studies, Indira Gandhi National Open University, New Delhi.

9. Prajapati, Sonal Valjibhai. **A comparative study of effectiveness of CSR activity of select public and private sector companies at Gujarat**. (Dr. Himanshu Vaidya), Department of Commerce, Rai University, Ahmedabad.

10. Shah, Nilambahen Mayurkumar. **Comparative and critical study of management of financial resources of selected municipal corporations in the State of Gujarat**. (Prof. Paresh Shah), Department of Commerce, Rai University, Ahmedabad.

11. Solanki, Binduben Ranjitsinh. **Tourist preference and perception of Zoos in Gujarat: A comparative study**. (Dr. Chinmayee J. Bhatt), Department of Commerce, Rai University, Ahmedabad.

12. Soni, Mukta. **Working capital management of public enterprises in Haryana**. (Dr. R R Saini), Department of Commerce, Maharshi Dayanand University, Rohtak.

13. Tank, Neha Govindbhia. **Financial relationship between capital structure and profitability of selected cement industries in India**. (Dr. C H Dhadhal), Department of Commerce, Saurashtra University, Rajkot.

14. Yadav, Priyanka. **Impact of e-service quality on satisfaction of customer: A study of the State of Haryana**. (Dr. Manoj Kumar), Department of Commerce, Maharshi Dayanand University, Rohtak.

Defence Studies

1. Pal, Parveen. **Evolution of art of warefare in the Mahabharat's period: An analytical study**. (Dr. R S Siwach), Department of Defence and Strategic Studies, Maharshi Dayanand University, Rohtak.

Economics

1. Dhutmal, Varsha Sitaram. **Marathwadyateel Jilhya nihaye dushkalthas karnibhut tharna-ya jalsinchan ghatkancha abhyas (1990-2010)**. (Dr. Mundhe N N), Department of Economics, Swami Ramanand Teerth Marathwada University, Nanded.

2. Hooda, Sonia. **A comparative study of poly-house farming and open field cultivation in Haryana: Some empirical evidences**. (Dr. Anita Dagar), Department of Economics, Maharshi Dayanand University, Rohtak.

3. Malik, Anu. **Agricultural credit and its impact on farm productivity in Haryana**. (Dr. Santosh Nandal), Department of Economics, Maharshi Dayanand University, Rohtak.

4. Sahoo, Prasanta. **Initiatives for sustainable development and livelihood strategies of Kandhas in Kandhamal, Odisha**. (Dr. Soumya Kanti Palit), School of Continuing Education, Indira Gandhi National Open University, New Delhi.

5. Seema Devi. **Agricultural institutional credit in Haryana analytical study of recovery of loans**. (Dr. Sanosh Nandal), Department of Economics, Maharshi Dayanand University, Rohtak.

Education

1. Babu, C P. **Instructional strategies for the development of mental abilities of science students at higher secondary level**. (Dr. Lizy Paul), Department of Education, Sree Sankaracharya University of Sanskrit, Kalady, District Ernakulam.

2. Brahmbhatt, Khushbuben Nitinkumar. **Construction and standardization of scientific aptitude test for SSC students of Gujarat State**. (Dr. Ashvinbhai Shah), Department of Education, Rai University, Ahmedabad.

3. Dave, Moksha Aniruddha. **Applicability of compulsory course of environmental studies on changes of students behavior towards environment in South Gujarat**. (Dr. Bharati Harish Thaker), Department of Education, Rai University, Ahmedabad.

4. Deolankar, Uttara. **Development of a training program for writing self-learning material based on analytical outcomes of study of existing processes of developing self-learning material**. (Dr. Nalini Patil), Department of Education, S.N.D.T. Women's University, Mumbai.

5. Khebde, Dhanaji Dagdu. **Kishoravastheymadheel sarvsamaney ani vishesh balkancheya shaikshanik vikasacha tolnik abhyas**. (Dr. B R Lahorkar and Dr. Balaji Girgaonkar), Department of Education, Swami Ramanand Teerth Marathwada University, Nanded.

6. Patel, Nikita Kanubhai. **A study of English language proficiency of secondary schools students of Gujarat State in context to their intelligence and English subject achievement**. (Dr. Bhavesh Shah), Department of Education, Rai University, Ahmedabad.

Journalism & Mass Communication

1. Kadam, Vikas Limbaji. **Krishi kshetre vikasat akashvanichey karye ani bhumika: Ek chikitsak abhyas: Vishesh sandarbh-Nanded Akashvani M F Kendra**. (Dr. Sudhir Ingle), Department of Mass Communication and Journalism, Swami Ramanand Teerth Marathwada University, Nanded.

Library & Information Science

1. Parmar, Anjana Lavjibhai. **Collection development in all college libraries of Kachchh University : A study**. (Dr. Suresh L. Lalwani), Department of Library and Information Science, Rai University, Ahmedabad.

Management

1. Adhana, Deepak Kumar. **Foreign Direct Investment and its impact on macroeconomic variables**. (Dr. Neelam Gulati), Institute of Management Studies & Research, Maharshi Dayanand University, Rohtak.

2. Kushwaha, Pratibha Singh. **Impact of HIPO analysis as a tool to identify high potential future leaders among automotive manufacturing industry**. (Dr. Gaurav Buch), Department of Management, Rai University, Ahmedabad.

3. Mehta, Nikita Umeshbhai. **An empirical study on financial competitiveness of SMEs in Gujarat**. (Dr. Mamta Brahmbhatt), Department of Management, Gujarat University, Ahmedabad.

4. Mudliar, Niranjan. **Study of modes of sustainable transportation for tractors and cars through containerized trucks with special reference to Bhopal City**. (Dr. Paramjeet Singh), Department of Management, Rai University, Ahmedabad.

5. Ranpara, Pratik Sureshbhai. **Effect of supply chain variables on customer satisfaction the case study of GMSCL**. (Dr. Himanshu Vaidya), Department of Management, Rai University, Ahmedabad.

6. Saveen Kumari. **A study of e-recruitment system and its effect on organizational performance**. (Dr. Garima Dalal), Institute of Management Studies & Research, Maharshi Dayanand University, Rohtak.

7. Solanki, Raviraj. **A study on factors influencing the purchase of Sports Utility Vehicle (SUV) car segment in Bhopal City**. (Dr. Paramjeet Singh), Department of Management, Rai University, Ahmedabad.

8. Sutaria, Ayushi Vismikbhai. **Effect of brand campaigns of online retailers on customers: A study of Urban Gujarat**. (Dr. Himanshu Vaidya), Department of Management, Rai University, Ahmedabad.

Physical Education & Sports

1. Reena Rani. **Effect of S A Q training on selected coordinative and playing abilities of kho kho players**. (Dr. Tejpal Singh), Department of Physical Education, Maharshi Dayanand University, Rohtak.

2. Sanjay. **Pro kabaddi league tournament: A study of Haryana State**. (Dr. Tejpal Singh), Department of Physical Education, Maharshi Dayanand University, Rohtak.

Political Science

1. Kavita. **Samkaleen sandarbh mein Gandhi ke rajnaitik darshan kee prasangikta**. (Dr. Rajender Sharma), Department of Political Science, Maharshi Dayanand University, Rohtak.

2. Kusum Lata. **Roll of social media in political awareness and public opinion amongst the youth: A comparative study of Gurgaon and Faridabad District**. (Dr. Rajender Sharma), Department of Political Science, Maharshi Dayanand University, Rohtak.

3. Pandya, Vanibahen Mahendrakumar. **Political leadership and journalism A case study of Gandhiji**. (Dr. Gajendra B. Shukla), Department of Political Science, Rai University, Ahmedabad.

Psychology

1. Chauhan, Vinayak Amratlal. **Psychological wellbeing and personality among nursing staff**. (Dr. Ashwin Jansari), Department of Psychology, Rai University, Ahmedabad.

2. Kavad, Hetal Devrajbhai. **Happiness and adjustment of students residing in hostel and at home**. (Dr. Ashwin Jansari), Department of Psychology, Rai University, Ahmedabad.

3. Patel, Sneha Amrutbhai. **Achievement motivation and adjustment of student's in context with gender and habitat**. (Dr. Ashwin Jansari), Department of Psychology, Rai University, Ahmedabad.

4. Raj, Lima. **Perceived self-derogation of mother as a moderator of mental health and externalising behaviours of adolescent**. (Dr. H Sylaja), Department of Psychology, Sree Sankaracharya University of Sanskrit, Kalady, District Ernakulam.

5. Shikha. **Mindfulness flow and spirituality as predictors of personal growth of adolescents**. (Dr. Punam Midha), Department of Psychology, Maharshi Dayanand University, Rohtak.

6. Unnimol, K K. **A psychological profile of adolescents with sensori-motor disabilities**. (Dr. H Sylaja), Department of Psychology, Sree Sankaracharya University of Sanskrit, Kalady, District Ernakulam.

Public Administration

1. Ajit. **Nirvirodh nirvachit gram panchayat oan kee gramin vikas mein bhumika: Haryana Rajye ka adhyayan**. (Dr. Rajesh Kumar), Department of Public Administration, Maharshi Dayanand University, Rohtak.

Social Work

1. Ambulgekar, Yogesh Vishwanath. **Kautumbik Hinsacharapasun Mahilanchey Sarakshan Adhiniyam 2005 antargat piditanchey Nanded**

Jilhyateel adhyayn. (Dr. Mujawar W R), Department of Social Work, Swami Ramanand Teerth Marathwada University, Nanded.

2. Janardan, Purohit Dharmik. **Need of disaster management plan in religious places and role of administration and government authority**. (Dr. Gajendra B Shukla), Department of Social Work, Rai University, Ahmedabad.

Sociology

1. Chonde, Ambika Govindrao. **Bhatkya jamatiteel aatamkathnachey samajshastriye adhyayan**. (Dr. Shinde Avdut Taterao), Department of Sociology, Swami Ramanand Teerth Marathwada University, Nanded.

2. Kumbharana, Trusha Bhupenrabhai. **Sociological study on "Bhoi" caste of Saurashtra**. (Prof. Babulal Panchal), Department of Sociology, Rai University, Ahmedabad.

3. Kunjumon, Aswathi. **Schooling and social disparities: The forms factors and effects**. (Dr. Dilip K G), Department of Sociology, Sree Sankaracharya University of Sanskrit, Kalady, District Ernakulam.

4. Madhusudan. **Urban poor in slums: A case study of Rohtak City in Haryana**. (Dr. Madhu Nagla), Department of Sociology, Maharshi Dayanand University, Rohtak.
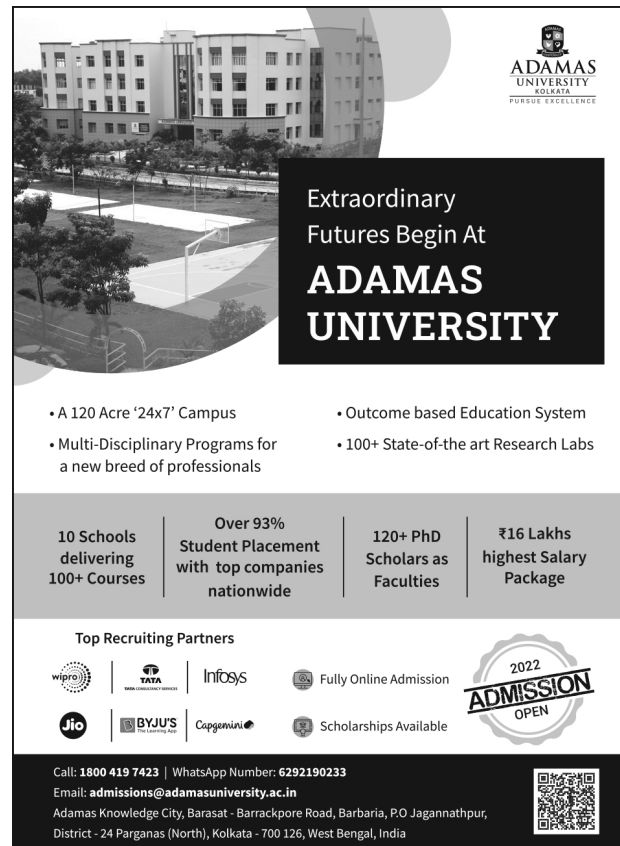
5. Sameena, M S. **Garbage wars: The political ecology of environmental justice movements in Kerala**. (Dr. Dilip K G), Department of Sociology, Sree Sankaracharya University of Sanskrit, Kalady, District Ernakulam.

6. Varma, Shailendra R. **Urbanization and discursive formation of land-use patterns: A study focusing on gentrification and social exclusion**.

(Dr. Dilip K G), Department of Sociology, Sree Sankaracharya University of Sanskrit, Kalady, District Ernakulam.

Womens Studies

1. Kabak, Likha Kiran. **Empowerment of women through Self Help Group in the context of rural development of Arunachal Pradesh: An empirical study**. (Dr. G Uma and Dr. Ram Krishna Mandal), School of Gender and Development Studies, Indira Gandhi National Open University, New Delhi. ❏

Goa Vidyaprasarak Mandal's
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Phone Nos. 2335875/2335819/8767916417 ● Email: gvmcce@yahoo.in

APPOINTMENT OF PRINCIPAL

Applications with full Bio-Data are invited from Indian Citizens for the **POST OF PRINCIPAL** (Unreserved Category). The required minimum qualifications for the post of Principal are as follows:-

A. Eligibility:

i. Ph.D. Degree.

ii. Professor/Associate Professor with a total Service/Experience of atleast Fifteen years of Teaching/Research in universities, colleges and other institutions of Higher Education.

iii. A minimum of 10 Research Publications in peer reviewed journal as approved by Goa University from time to time on UGC listed journals out of which at least two should be in Scopus/Web of Science Journal.

iv. A minimum of 110 Research Score as per Appendix II, Table-2.

B. Tenure:

A College Principal shall be appointed for a period of five years, can be extendable for another term of five years on the basis of performance assessment by a committee appointed by the University, constituted as per these statutes.

Essential Requirements:

a) Knowledge of Konkani Language.

b) 15 years of Residence Certificate in Goa issued by competent authorities.

Desirable Requirements: Knowledge of Marathi Language.

Scale of Pay: - As prescribed by the UGC, Goa University and Directorate of Higher Education, Govt. of Goa from time to time.

Service Conditions: As prescribed by the UGC, Goa university, Directorate of Higher Education, Govt. of Goa and other competent authorities.

Applicants who are already employed shall send their applications through proper channel.

Applications completed in all respects with photograph, along with self-certified photocopies of statement of marks of all public examinations from S.S.C. onwards, copy of 15 years residence certificate, experience certificate, publications, research score sheet etc. should reach the Chairman, Working Committee, Goa Vidyaprasarak Mandal, Ponda-Goa, Pin-403401 **within 20 days** from the date of publication of this advertisement by superscribing on the envelope "Application for the post of Principal".

Place: Ponda- Goa
Date: 07 /01/2022

Chairman
Working Committee
Goa Vidyaprasarak Mandal

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GURUKRUPA COLLEGE OF EDUCATION & RESEARCH, KALYAN
Near Gauripada Talav, Milind Nagar, Kalyan (W), Dist. Thane-421 301

MINORITY

APPLICATIONS ARE INVITED FOR THE FOLLOWING POSTS FROM THE ACADEMIC YEAR 2021-22

UNAIDED

Sr. No.	Cadre	Subject	Total No. of Posts	Category
1	Assistant Professor	Mathematics, Science, Social Science, Languages	10	10 Open
2	Librarian	—	01	01 Open

The above posts are open to all; however, candidates from any category can apply for the post.

Reservation for women will be as per **University Circular No. BCC/16/74/1998 dated 10th March, 1998. 4% reservation shall be for the persons with disability as per University Circular No. Special Cell/ICC/2019-20/05 dated 05th July, 2019.**

Candidates having knowledge of Marathi will be preferred.

"Qualification, Pay Scales and other requirement are as prescribed by the UGC Notification dated 18th July, 2018, Government of Maharashtra Resolution No. Misc-2018/C.R.56/18/UNI-1 dated 8th March, 2019 and University Circular No. TASS/CT)/ICD/2018-19/1241 dated 26th March, 2019 and revised from time to time".

The Government resolution and Circular are available on the website : mu.ac.in.

Applicants who are already employed must send their applications through proper channel. Applicants are required to accounts for breaks, if any, in their academic career.

Applications with full details should be reach the **SECRETARY/ PRINCIPAL, Gurukrupa College of Education and Research (M.Ed.), Kalyan (W), S.S.P.M. Educational Complex, Near Shubham Apartment, Opposite Gauripada Talav, Gauripada Road, Milind Nagar, Kalyan (W), Dist. Thane-421301 within 15 days** from the date of publication of this advertisement. **This is University approved advertisement.**

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GURUKRUPA COLLEGE OF EDUCATION & RESEARCH, KALYAN
Near Gauripada Talav, Milind Nagar, Kalyan (W), Dist. Thane-421 301
MINORITY

APPLICATIONS ARE INVITED FOR THE FOLLOWING POSTS FROM THE ACADEMIC YEAR 2021-22

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Manora-Raia, Goa

REQUIRES

</div>

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(2) ASSISTANT PROFESSORS

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(3) LIBRARIAN

(4) DIRECTOR OF PHYSICAL EDUCATION AND SPORTS

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https://www.unigoa.ac.in/uploads/confg_docs/20210125.112053~Statutes_21_Jan_2021.pdf

All the above posts are subject to sufficient workload and approval of Goa University. Pay scale and Rules & Regulations applicable, as per statutes of Goa University and Govt. of Goa

Applications with detailed CV, 2 recent passport size photographs, copies of certificates and mark sheets, should be sent in an envelope superscribed with the post applied for within 20 days from the date of this advertisement to **The Director, V. M. Salgaocar Institute of International Hospitality Education, Manora-Raia, Salcete, Goa 403 720.**

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