



13TH CONVOCATION

8TH DECEMBER, 2020

<https://www.terisas.ac.in>



ABOUT

TERI SCHOOL OF ADVANCED STUDIES

The genesis of TERI School of Advanced Studies (TERI SAS) is rooted in the comprehensive research, consultancy, and outreach activities of The Energy and Resources Institute (TERI). In 1999, the institute was granted "Deemed to be University" status by the University Grants Commission and notified by the Ministry of Human Resources Development, Department of Education, Government of India.

Earlier known as 'TERI University', the institute changed its name to 'TERI School of Advanced Studies' (TERI SAS) with effect from 29 Nov 2017. With a mission to create knowledge and capacity in various areas of sustainable development, TERI SAS exposes its students to a variety of subjects, tools and methodologies in an interdisciplinary mode.

Accredited by the National Assessment and Accreditation Council of India (NAAC), the institute has received accolades for incorporating new and innovative elements in education. All technical programmes of the Institute are approved by the AICTE.

A total of 169 students are currently enrolled in the doctoral programmes, and 527 in the various master's programmes. In keeping with its global outlook, TERI SAS has academic collaborations with select foreign universities, which provide for joint research and curriculum development as well as faculty and student exchanges. The institute attracts students from all over the country and a fair number of international students.



At present, TERI SAS offers the following programmes:

Ph.D.

M.Sc. (Environmental Studies and Resource Management)

M.Sc. (Geoinformatics)

M.Sc. (Climate Science and Policy)

M.Sc. (Plant Biotechnology)

M.Sc. (Economics)

M.Sc. (Water Science and Governance)

M.A. (Public Policy & Sustainable Development)

M.A. (Sustainable Development Practice)

MBA (Infrastructure Management)

MBA (Sustainability Management)

M.Tech. (Renewable Energy Engineering and Management)

M.Tech. (Urban Development Management)

M.Tech. (Water Resource Engineering and Management)

**LL.M. (Environment & Natural Resources Law/ Infrastructure
& Business Law)**

The doctoral programmes and research centre around seven basic themes: Bioresources & Biotechnology, Business Sustainability, Energy and Environment, Natural Resources Management, Policy Studies, Water Science & Governance and Legal Studies.

PROGRAMME FOR CONVOCATION

8 DECEMBER 2020

4:00 pm	Compere welcomes guests
4:05 pm to 4:10 pm	Welcome address by Registrar
4:10 pm to 4:15 pm	Vice Chancellor's address
4:15 pm to 4:22 pm	Address by Chancellor
4:22 pm to 4:30 pm	Award of the degree of Doctor of Philosophy, Honoris Causa
4:30 pm to 4:50 pm	Convocation Address by Chief Guest
4:50 pm to 5:45 pm	Award of degrees to graduands
5:45 pm to 5:50 pm	Presentation of medals
5:50 pm to 5:55 pm	Vote of thanks by Dean (Academic)
5:55 pm to 5:57 pm	National Anthem

Doctor of Philosophy, honoris causa

CITATION

Raghunath Anant Mashelkar

An alumnus of the Institute of Chemical Technology (ICT), Mumbai, Dr Raghunath Anant Mashelkar received his PhD in the year 1969. He has made seminal contributions in the field of research in transport phenomena, especially in thermodynamics of swelling, super-swelling and shrinking polymers, modelling of polymerisation reactors and engineering analysis of Non-Newtonian flows. An expert in restructuring public R&D institutions, Dr Mashelkar's pioneering work has left an indelible mark in the field of scientific innovation in the country and shaped the nation's science, technology and innovation policies in the last three decades. One of the eminent scientists of India, he has been the proponent for rooting a strong Intellectual Property Rights (IPR) regime. Dr Mashelkar successfully led the fight against US patents on turmeric, neem and basmati rice citing that these were part of Indian traditional knowledge while championing this form of knowledge at par with formal scientific knowledge which led to genesis of the new Traditional Knowledge Resource Classification. His work on inclusive innovation based on 'getting more from less for more people' has the foremost significance to the sustainable development movement.

Dr Mashelkar is currently the Chancellor of



ICT, Mumbai. Amongst others, he has been a National Research Professor at the National Chemical Laboratory, President of Global Research Alliance, and Chairperson of the National Innovation Foundation of India. He led the Council of Scientific and Industrial Research (CSIR) as its Director General and has been at the helm of Indian National Science Academy and Institution of Chemical Engineers, UK, while being a member of the Scientific Advisory Council set up by successive Prime Ministers in India for three decades. He has immensely contributed to the causes of drug regulatory system, technical education and auto fuel policy by providing direction as chair of various scientific committees and is currently associated with many international, national and corporate bodies in different capacities.

Recipient of numerous national and international exclusive honours, Dr Mashelkar has been awarded the highest Indian civilian awards of Padma Vibhushan, Padma Bhushan and Padma Shri, by the President of India for his contribution to the nation and science. He has received many accolades meant for topmost scientists in the world including TWAS-Lenovo Science Prize, Shanti Swaroop Bhatnagar Prize, Fellow of the UK Royal Society, US National Academy of Science and US National Academy of Inventors in addition to being a Foreign Associate of American Academy of Arts & Science. The TERI School of Advanced Studies applauds Dr Mashelkar for his

indomitable perseverance in achieving utmost excellence amidst adversity, which is an inspiration for generations of Indians. His contribution in providing worldwide recognition to traditional knowledge of India and changing the rules of engagement in the field of IPR has been transformational. His leadership in research and development which strengthened grassroots innovations in India is recognized globally.

The TERI School of Advanced Studies wishes to express its deep respect for his achievements by conferring the degree of Doctor of Philosophy, honoris causa, upon Dr Mashelkar.

New Delhi
8 December 2020

(Manipadma Datta)
Chairperson, Board of Management

13th Convocation Address Reinventing post COVID India with 3 Ds

By

Dr R A Mashelkar, FRS
National Research Professor



Dr Shailesh Nayak, Chancellor, TERI School of Advanced Studies, Prof Manipadma Datta, Vice Chancellor, Distinguished Members of the Board of Management, Trustees, Deans, Registrar, distinguished guests, proud graduands of the day, their equally proud parents, ladies and gentlemen.

It is a great honour and a privilege to deliver the 13th Convocation address of TERI School of Advanced Studies (TERI-SAS). Its mother institution, The Energy Research Institute (TERI), had distinguished itself globally through its pathbreaking contributions. I am delighted to see that TERI SAS itself is creating its own distinctive imprint in the area of sustainable development.

I want to begin by congratulating the parents first. Education is the best gift that you could have given to your children.

I want to then congratulate the graduates of the day. When our generation graduated, India was a third world country. When you are graduating, India is well on its way to become the third most powerful country in the world. And my young friends, it is you, who will be charged with building this great future of our great nation. They say that institutions can't build the future of the young, but they can build the young for the future. You are fortunate that your alma mater has equipped you fully with skills and tools to deal with this challenge most confidently.

I want to thank the Chancellor, Dr Shailesh Nayak, whom I admire as a great scientist and a visionary science leader, for inviting me to deliver this prestigious address. Further, I am most grateful to you for honouring me with the Honorary Doctorate. This happens to be my 43rd Honorary Doctorate, but this is the first one that I have received it virtually. Also it is most precious for me as it is given by such a wonderful institution with such warmth and affection. We are meeting virtually in the midst of this Coronavirus pandemic. There has been an unprecedented destruction of lives and livelihoods. The whole world is now in a reset mode.

When we in India are trying to reset and recover, there is an opportunity in this adversity of rethinking and reimagining the new India of our dreams so that we achieve not only recovery but green recovery, not just growth but accelerated green growth.

How to achieve that is the theme of my Convocation address today.

We have experienced pandemics before, be it Yellow fever, SARS, Ebola, Swine flu or the current coronavirus pandemic. Both pandemics and climate risks lead to a range of devastating socioeconomic impacts. There is a striking similarity between the shocks and aftereffects of pandemics and climate risks.

First, the knock-on effects of pandemics propagate fast across a hugely interconnected world.

Second, their socioeconomic impact grows disproportionately and even catastrophically once certain thresholds are reached, like hospitals falling short of ICUs.

Third, they exacerbate the vulnerabilities in the system, which always existed, but were never tested. The vulnerabilities of public health care systems, that of extreme inequalities, is a case in point. In India, we witnessed the impact of these, when we saw millions of poor migrant workers walking to their villages, or when our public health infrastructure got overwhelmed.

Fourth, they affect disproportionately the most vulnerable populations of the world. Look at the present pandemic. In nearly 100 days, over 100 million families plummeted from poverty to extreme poverty. In nearly 100 days, 450 million jobs were lost. In 100 days, 1.6 billion children were thrown out of school, with one third of them suffering from digital deprivation having no access to on line learning.

The current Coronavirus pandemic is possibly a trailer of what a full-fledged climate crisis could mean in terms of simultaneous exogenous shocks both on the supply side as well as the demand side, how huge disruption of supply chains would take place and how the amazing play of global transmission and amplification mechanisms will be on display.

This trailer also has a lesson for us that the costs of a global crisis of this dimension is bound to vastly exceed those of its prevention, so we must do everything possible to prevent it.

And mercifully, the drivers of such a

prevention are emerging. Among them, the foremost is the indomitable human spirit that fought all the previous pandemics and won in each case. Then I will put emerging 3 Ds at the top of the list, namely digitalisation, decentralisation and decarbonisation. If these 3 Ds are backed up by bold policy measures, we could not only reimagine but reinvent a new India of our dreams.

Let me explain each of these 3 Ds.

The first D is digitalisation.

Our visionary PM's dream of digital India is taking great shape. For example, it took India 25 years for 2G broadband cellular network technology, but India moved to 4G in just 3 years, thanks to the audacity of Jio, and the same audacity helped India to jump from 155th position in mobile data consumption to the first position in just a matter of few months. And then comes the global race, next generation 5G race, in which, again Jio is rolling it out in India with fully indigenous developed network, technology, hardware. Take Telehealth. 50 million Indians accessed healthcare online from March to May 2020, with 80 percent of all telemedicine users and patients using it for the first time. Look at mobile payments. India jumped to number one position during the last month.

The second D is decentralisation.

In every endeavour, be it energy, water, health, manufacturing, services, and you name it, development of technologies leading to decentralisation is on cards. Working from home, telemedicine, digital financial transactions are gathering pace and all of them mean decentralisation that is leading to decarbonisation. Take health as an example. Rather than having centralised medical testing facilities, creation of decentralised point of care non-invasive user friendly testing technology is leading to decentralisation.

Internet of Things (IoT) –connected devices– are helping people to fight COVID-19 and enabling the sharing of data with their doctors from their homes. Let me give you an example.

In my mother's name, I have created Anjani Mashelkar Inclusive Innovation Award. This

is the tenth year of the award.

It went to a young start up, Dozee, which created a contact free health monitor based on IOT, that can be placed below a mattress and track vital parameters. Within minutes, it can convert any bed into a continuous health monitoring unit, almost like converting normal beds into step down ICUs, and that too at 10% of the cost. This means care at home, for high risk patients, for home isolation of COVID patients and so on. This is decentralisation, hospital at home.

As far as energy is concerned, decentralised creation and consumption is on the cards, shifting to decentralised micro grids. In a way, we are coming the full circle. Before large scale electricity grids were rolled out, electricity started off local, and decentralised, with a patchwork of micro-grids operating across cities. These isolated micro-grids were then integrated and centralised. Larger 'utility-scale' power stations served homes and businesses in cities, and could be situated far away from where the power was used, due to the advent of Alternating Current (AC). We may be coming full circle, then, as decentralisation initiatives take root and spread. The real drivers are advances in renewable energy technology, energy storage and the power of data.

The third D is decarbonisation.

We need green growth and for that we will need green technologies, that will help us become net carbon neutral in coming years. Renewable energy, be it solar or wind or bio based, will be the key. The focus is shifting to new economies, like bio economy based on biofuels technologies, hydrogen economy based on hydrogen fuel cells technology, etc.

Industry is accelerating the process of decarbonising, by prioritising the retirement of economically marginal, carbon-intensive assets, through the use of shorter supply chains, creating higher energy-efficiency manufacturing and processing and digital transformation from manufacturing to marketing.

Let's look at manufacturing. 3 D printing, which is based on additive manufacturing, is

helping in decentralised manufacturing and doing away with carbon footprint created in huge supply chains in normal mass manufacturing.

In summary the 3 Ds are completely interdependent. Digitalisation creates decentralisation, which in turn creates decarbonisation. The 3 Ds are transformative. But as I said earlier, these 3 Ds have to be backed up by a policy action. Policy is the main difference between the current energy transition and past energy transitions, such as coal to oil to natural gas. This is shown in the 2019 report by Oxford Institute of Energy Studies.

Governments have used a variety of policy tools to accelerate decarbonisation. Policies have varied from direct stimulation of the deployment of renewable technology (feed-in tariffs, feed-in premiums, production tax credits, investment tax credits, green certificates, renewable portfolio standards) or favour the technology progress of renewable energy (financial support for R&D) or create policies aimed at directly reducing carbon emissions (carbon taxes and cap-and-trade systems) are examples. In India, we have seen the impact of bold policy initiatives, let's take just one example. Let us take lighting industry, which is a consumer of around 15% of the energy we produce. India launched the world's largest lighting replacement project by setting up this aspirational idea of 'Affordable LEDs for All' in our UJALA mission.

The policy level innovations were done in terms of demand aggregation, competitive bidding, standardisation and system delivery innovation.

The market share of LEDs went from 0.3% to 80% in just nine years. The price of a 9W LED bulb plummeted from seven dollars in 2009 to one dollar in 2018. India did it with speed too. It was thought that technology adoption will take five years but India did it in six months. India achieved scale. 100 million plus LED bulbs were distributed in record time. This led to sustainability by eliminating the release of 3 million tonnes of carbon dioxide per year. 0.85 tonnes of carbon dioxide is released per megawatt hours in coal based power plants. So the sustainability impact is huge!

So my friends, here is a brilliant example of what magic India can do with speed, scale and sustainability by riding on the wave of 3Ds with a 4th D added, and that being the Determined action backed by bold policy and immaculate execution.

At the end, my young friends, you will tell me, you are 77, you are playing the 4th inning of your life, but we are just beginning the first inning. What are the lessons that you can give us from the book of your life? I will give you five Mashelkar Mantras, which have helped me in my life. I hope they will help you too. Here they are:

First, the beginning of your own life is not in your hands, but where you end up, is. You can't predict your future, when you are beginning your journey. When I was studying Newton's laws of motion in college, I did not realise that less than 4 decades later, I will sign in the same book as Newton did, while getting inducted as a Fellow of Royal Society in a ceremonial process in London.

As a poor boy, the only son of a struggling poor widowed mother, I was going to leave studies. I could survive and study because of a Tata scholarship. I would not have imagined that the head of the house of Tatas, Ratan Tata and I will receive Padma Bhushan award, in the same ceremony in Rashtrapati Bhavan on 17 March 2000, at the hands of late President R K Narayanan, who could also, continue his studies due to a Tata scholarship, just like me.

So the first Mashelkar mantra is your aspirations are your possibilities. Believe in

yourself and keep them high.

My second Mantra: there is no substitute to hard work for becoming successful. Like instant coffee, there is no instant success. I have myself worked 24x7, week after week, month after month, year after year and will do so till I take my last breath. The golden rule is the following. Work hard in silence. Let success make all the noise.

My third Mantra: perseverance matters. It is always too early to quit. Quitters are never winners and winners are never quitters. Interpret FAIL as your first attempt in learning. Your best Guru is your last mistake as long as you learn from it.

My fourth Mantra: be always a part of a solution, never part of a problem. If you can't find the way, create your own new way. You will keep on knocking on the doors. Don't get frustrated if they don't open. Create your own doors.

My fifth Mantra: there is no limit to human endurance, no limit to human achievement and no limit to human imagination, excepting the limits you put on your mind yourself. Be 'limitless' in terms of your imagination. So every day, when you wake up, no matter how old you are, say to yourself that my best is yet to come and may be today is that day.

My young friends, all my best wishes and choicest blessings will be always with you, when you keep on climbing on this limitless ladder of excellence and bring glory not only to yourself, to your family, but also to our beloved nation, our glorious motherland.

Address by Chancellor

Dr Shailesh Nayak

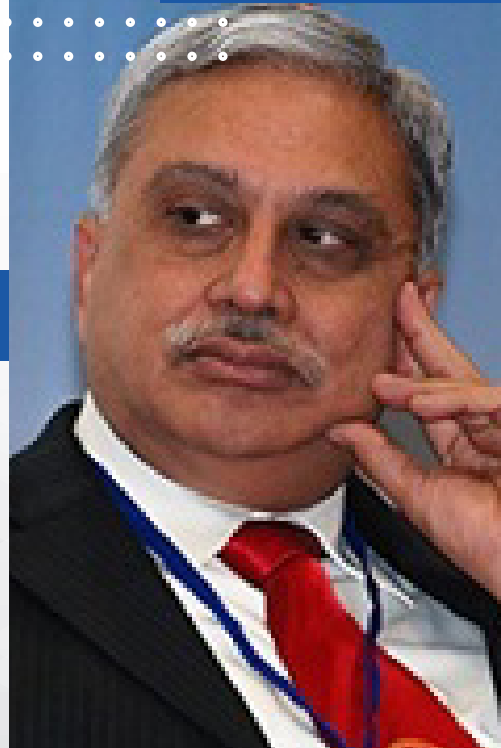
Dr Shailesh Nayak

Respected Dr. Mashelkar,
Chief Guest of today's function,

Dr. Datta, Vice-Chancellor of the
TERI Institute of Advanced Studies,

Members of Board of Management
and Trustees of TERI-SAS

Deans, Registrar, Faculty Members,
Distinguished Guests, Media representatives and
My Dear Students,



Good Afternoon to all. My heartiest Good Afternoon to all. My heartiest congratulations to all students graduating today and going to face many new challenges. Currently, we are facing a pandemic, one of the worst episodes, ever faced by us during last hundred years or so. Our life is dramatically changed, however, the advances in science and technology has allowed us to sustain ourselves and control the pandemic up to a large extent. We are fortunate to have Dr. Mashelkar, one of the greatest scientists and innovators, country has ever produced, has agreed to address you all. Thank you, Sir, for accepting our request and gracing today's function.

TERI-SAS has been a unique institute for building capacity to address issues related to sustainability and balancing agenda of protection of environment and inclusive development, and building a new kind of leadership. A structured process of learning

of inclusive education as advocated by TERI-SAS, is an essential requirement of creating a sustainable society. The New Education Policy of India has recognised this fact and provided impetus to address sustainability as a part of education.

The Concept of 'Sustainability' is being looked from different disciplines of ecology and environment, economics, technology, political science and many others. The Brundtland report, prepared by the World Commission on Environment and Development in 1987, provided a basic framework for the sustainability and is widely accepted among policy makers. Sustainable development, according to the report, "is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This concept has been very-well articulated in 'Isha Upnishads,' as well.

It is mentioned that "While enjoying fruits of creation, one should not covet for other's possessions; one should partake the means of livelihood to the minimum and conserve the resources available on universe for others to meet their requirements."

The question is how we can articulate our 'requirements' or 'needs.' These aspects are viewed from different angles such as requirements for avoiding certain forms of harm by Miller (1999), or as the conditions necessary to attain some threshold of human flourishing by Reader (2007), or as preconditions for non-impaired participation in social life by Doyal and Gough (1991), or as requirements necessary for capabilities to attain certain valued social functioning by Amartya Sen (1999).

TERI-SAS has been practicing to integrate natural science, technological innovations and social sciences to address issues of sustainability. While considering the 'needs,' it is essential to address the requirements of "world's poor" on a priority. It should have a strong bearing on how goods and services yielded are to be distributed between poor and rich or developing and developed world. That means, demography, resource conservation and socio-economic conditions are to be structured in such a way that the 'equity' is ensured between poor and rich. We also need to factor in changing needs of human beings which is dynamic while society is in transformation mode.

The social transformation of India after independence, especially after 'green revolution' in sixties and 'liberalisation of economy in nineties,' has to be recognised as improvement in socio-economic conditions of large majority though poverty is yet to be completely eliminated. The pandemic has also exposed the necessity in improvement in health infrastructure in the country. The challenges of inequality demand understanding of requirement of livelihood, social justice and environmental sustainability. The equal access to all levels

of education vital for to address inclusiveness.

The distribution of resources in a just and fair way has to consider the historical access and use of resources by the developed world. Considering that India having diverse culture, young population and socio-economic inequality, we need a policy for sustainable development, which is based on our needs. It should focus specifically on those who are at the bottom of the ladder. We need our own understanding of sustainability, not necessary following the concept of the developed world.

The question is how we can preserve our ecosystems and environment and at the same time ensure improve quality of life of large population. The question which is constantly being raised is what is more important well-being of present and future generations or well-being of all plant and animal.

I am sure the learning provided in TERI-SAS will make you worthy of finding appropriate models to address the sustainability and various questions related to it. I wish you very best in your future endeavours.

Thank you very much.

References

- Doyal, Len and Ian Gough 1991, A Theory of Human Need. Macmillan.*
- Miller, David 1999. Principles of Social Justice. Harvard University Press.*
- Reader, Soran 2007. Needs and Moral Necessity. Cambridge University Press.*
- Sen, Amartya 1999. Development as Freedom. Alfred A. Knopf.*
- World Commission on Environment and Development (WCED). 1987. Our Common Future, Oxford and New York: Oxford University Press.*

Address by Vice-Chancellor

Prof. Manipadma Datta

Very good afternoon!

Our Chief Guest, Padma Vibhushan Dr Raghunath Anant Mashelkar, our Chancellor, Dr. Shailesh Nayak, TERI SAS Board of Management members, our Deans, my other faculty colleagues, the Registrar and other colleagues in administration, the Graduands and other student friends, other distinguished guests, ladies and gentlemen, welcome you all!

My dear graduating students, it's the day we all wait for the whole year, the D-day for you, the day of aspirations, the day of a new beginning, the day of inspiration and celebration for us all who continually strive for achieving our goal of a sustainable world order.

It's really a challenging time! The whole world, our nation included, is fighting against Covid endemic! It's an extra-ordinary situation for the nation indeed compelling us to hold the 13th Convocation in virtual mode! Of course, we miss the charm of our physical proximity! However, I'm quite sure, we are mentally close and united as ever before! We are all missing the physical audience of our Chief Guest on our campus but must remain satisfied with this virtual reality for now! Let's hope and pray for quicker recovery from this unprecedented situation that has stalled the world development on every count! There's a very common say, united we stand, and divided



we fall! It stems from the same spirit behind India's traditional philosophy of Vasudhaiva Kutumbakam, the world is one family! This is once again proved! Finally, humanity wins! We shall overcome indeed!

As you all understand it's a day of celebration, it's a day of excitement and enlightenment too! This time we have got another great personality who has made indelible contribution in the world of science and development. Padma Vibhushan Dr. Mashelkar remains a lasting inspiration to us all and the generations to come! We get the opportunity to listen to him!

Since March, the University teaching is online! I must admit that this crisis has also taught us how to optimize the use of technology! We never could imagine that we would be able to keep our interaction and

learning in the face of such a sudden crisis! But we have done with quick adaptability and sincere coordination among all our students, teachers, and support staff! I take this opportunity to thank them all!

As a curious student of sustainable development, we all know that education is an integrated whole the goal of which is the development of clearer perspectives! We at TERI SAS are proudly striving to reach this goal! This august institution was established with this holistic vision only! If we are no good students, we can't become good teachers! Real learning is never domain specific! That's why we have been championing the cause of interdisciplinarity since the beginning and happy to find that the New Education Policy document to a great extent reflects the core we are nurturing all these days! Our vision gets honourably vindicated! We can echo Benjamin Disraeli with confidence: A University should be a place of Light, of

Liberty, and of Learning! Tamoso Maa Jyotirgamaya! We can strongly hope, our education system will continue to transcend to a more holistic learning system!

My dear friends, the graduating batch, please remember, each day you are going to face more and more complexities and challenges! Today your journey of life starts! You are the hope! You are the future! The whole world looks at you with great expectations! I take this opportunity to reiterate my faith in you! As I always remind you, if your neighbour isn't happy, you too aren't! compassion is at the root of sustainability! We should enjoy life with the doctrine of shared value! So, my dear ambassadors, go and make the right choice! As Martin Luther King, Jr, said: The time is always right to do what is right!

Congratulations and my best wishes!
Thank you all.

Welcome Address by the Registrar

Mr Kamal Sharma

Very good afternoon.

I deem it a unique privilege to welcome Dr. Raghunath Anant Mashelkar, Chief Guest of today's convocation, Dr Shailesh Nayak, Chancellor, TERI School of Advanced Studies, Prof. Manipadma Datta, Vice-Chancellor, TERI School of Advanced Studies, our Deans, my own faculty colleagues and staff, graduands, ladies and gentlemen. It is indeed an honour to have amongst us Dr. Mashelkar as Chief guest to deliver the 13th Convocation address.

Dr Mashelkar, as you all are familiar with, was the former Director General of the Council of Scientific and Industrial Research (CSIR) and is the recipient of the highest Indian civilian awards of Padma Vibhushan, Padma Bhushan and Padma Shri, by the President of India for his contribution to the nation and science.

A very warm welcome to you at the ceremony Dr Mashelkar. Convocation is an important part of your university experience but this year, due to the COVID-19 pandemic and the need for physical distancing, convocation ceremony at TERI School of Advanced Studies will be a 'Virtual' Convocation - a celebration of achievement, where we honour the hard work and academic excellence of our graduates. The ongoing public health response to COVID-19 continues to have wide-ranging impacts on campus operations, including our ability to

host traditional convocation celebrations. The academic year closing in June 2020 has been momentous and the commitment of our faculty and staff has been the foundation on which we have made progress in various areas. I take this opportunity to congratulate our faculty whose contribution has been recognized in various fields.

The TERI School of Advanced Studies continues to strive on path of dedicated hard work and academic excellence. With facilitation and coordination support by the Institute, faculty are currently engaged in large number of projects in collaboration with various partners. Relevant policies that underpin good scientific research practices are put in place and research ladder has been created for establishing Research Centres in the areas of strategic interests of the Institute.



TERI SAS remains committed to being inclusive, as a diverse population of students, faculty and staff from different religions, castes, cultures, physical abilities are its greatest strengths. Policies on various issues have also been revised to conform to changing legal environment and statutory directives. The outreach efforts of the Institute have been strengthened through hosting of a number of education fests and events over the last year. We are in constant dialogue with our alumni to build a vibrant TERI SAS community for more purposeful engagements. TERI School of Advanced Studies views collaboration with strategic partners as a major step in enhancing its enrichment. To provide fillip to this effort several MoUs have been concluded since the last convocation.

We are gathered here today to felicitate the thirteenth batch of graduands from this Institute. 18 of them will receive doctoral

degrees whilst 216 will receive master's degrees. I extend my heartiest congratulations to the class of 2018 and the medal winners!

I would like to congratulate the graduands, the parents and guardians. This is your day. Your dear parents have struggled and endeavored to meet Institute requirements, provide for their necessities, sacrificed all they had, for their children to see to it that they have a bright future.

Dear Graduands, I admire you for your fine accomplishments during your stay at TERI School of Advanced Studies. My sincere, good wishes for the work you aspire to do in the future.

Your excellencies, members of diplomatic missions, Trustees, members of Board of Management and Academic Council, visiting faculty members, parents, members of the press, a very warm welcome to you all.

Vote of Thanks by Dean (Academic)

Dr Atul Kumar

Our esteemed chief guest, Dr R A Mashelkar, Hon'ble Chancellor and Vice Chancellor, Dean, faculty members, Registrar, colleagues from administration, distinguished guests, most importantly our graduating students and their proud family members.

It is my honour and privilege to propose the vote of thanks on this significant occasion.

We have gathered here virtually on this august occasion of the convocation ceremony of TERI School of Advanced Studies. This year this convocation is unique in many ways; it is special because it's the first time the convocation is being organized virtually.

There is this famous quote on gratitude "We often take for granted the very things that most deserve our gratitude." I would like to express my heartfelt gratitude to Dr. Mashelkar for accepting us to grace this day with his presence. Dr Mashelkar, thank you for your very insightful address and sharing your invaluable insights with our graduating batch. My immense thanks to our Hon'ble Chancellor and Vice Chancellor for your able guidance and supervision. Sirs, let me take this opportunity to thank you for your unflinching support which has always been forthcoming. There are so many people in the Organising Committee who have worked tirelessly behind the scenes and truly deserve a special thanks. It would not be possible to name them individually. Nevertheless, my thanks to each one of them. We also express our



gratitude to those who have supported us in many ways behind the scenes.

Thanks to the volunteer students who have been working hard to arrange this event. I want to express my gratitude to the colleagues in the Administration Team including the technical and support staff.

Esteemed faculty members, you are the backbone of this institution. I would like to thank all of you for your commendable efforts throughout the year and for making the academic journey of our students at TERI School of Advanced Studies worthwhile.

Thank you to the entire graduating class of 2020 for giving us this proud moment and the wonderful memories for a lifetime to cherish. This institution remains indebted to you forever. Those who have graduated today, we

hope that you go out as ambassadors of the TERI School of Advanced Studies and seek to pursue your dreams.

And a special thanks to the parents and family members for joining online - we know it is a

proud day for you. It asserts faith in what we are doing towards society. Your virtual presence has made all this difference to this ceremony.

Wish you all the best.



LIST OF TOPPERS

NAME	COURSE
Vanika Bajaj Sayal	M.A. (Sustainable Development Practice)
Mansi Bachani 2019-2020	Master of Laws (Environment and Natural Resources Law)
Ditipriya Bose	M.Tech. (Renewable Energy Engineering and Management)
Amishi Tewari	M.Sc. (Environmental Studies and Resource Management)
Aishani Nitingiri Goswami	M.Tech. (Water Resources Engineering and Management)
Rajat R Khajane	MBA (Business Sustainability)
Shivansh Gchildiyal	M.Sc. (Geoinformatics)
Harshita Saxena	M.Sc. (Plant Biotechnology)
Anushkriti	M.Tech. (Urban Development Management)
Yashi Puri	M.Sc. (Economics)
Anita Karn	M.A. (Public Policy and Sustainable Development)
Rohan Sharma	MBA (Infrastructure)
Dikshita Arora	M.Sc. (Water Science and Governance)
Soham Banerjee	M.Sc. (Climate Science and Policy)



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