Experts' Point of View

Developments in science and technology hold the key to better future for man. But unless science and technology are integrated together in the right direction even good science cannot lead to good technologies. As the nation celebrates science day, Lokmat Times interacted with eminent scientists and doctors to get their views on 'Integrated approach in Science and technology for a sustainable future'.

sustainable future depends on how well we use our natural resources today so that their availability is not compromised for our children and their future genera-



tions. Our lives and our future are dependent on science and technologies. Science is the pursuit of truth; therefore, there is nothing like bad science. However, science is the mother of technologies; both good and bad. A technology can be either good or bad depending on the kind of footprint, positive or negative that it leaves on the earth. Good technologies should leave no carbon footprints. Bad technologies can destroy everything around us today or tomorrow. The earth needs responsible scientists and climate-

positive technologies for better future. Keshav Kranthi Chief Scientist, International Cotton Advisory Committee. Washington DC

the success of Organ donation of 'Brain dead' patients and transplantation is a giant leap in the medical sciences. More and more families are medical sciences. coming forward to donate organs of their loved ones.

The success of Cadaver organ dona-

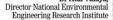


tion, is largely due to the involve ment of the NGO MOHAN Foundation which has headquarters in Chennai, It's staff trained Nagpur volunteers and the first Deceased Organ Donation happened in just one month. City is now on the National grid of sending and receiving organs across the country

- Sqn Ldr (Dr) Ravi Wankhede, Director MOHAN Fdeopujarioundation, Nagpur Founder member and secretary Zonal Transplant Coordination Centre, Nagpur.

ustainable depends on long time availability of Natural resources and life supporting environment on earth. Unruly use of science and technology for selfish human mottos would drain

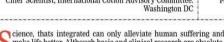




onnecting science and technology can bridge the gaps among developed and developing countries for achieving the Sustainable Development Goals and producing more flourishing, healthy, inclusive and sustainable societies. Science and technology offer the prospect of solutions and opportunities for sustainable development that are healthier, not expensive, quicker, scalable and easy to use. While the potential to increase the sustainability of development is evi-



- Dr Anupam Agnihotri,





the very concept of Integrated approach, scientific community has been able to progress in right direc-tion. Over the last decade, developments in Artificial intelligence (AI) have revolutionised a wide spectrum of fields such as engineering, education, e-commerce, and healthcare. In medical sciences, AI has generated tremendous promise in terms of patient care, diagnosis and treatment. The broad applications of AI in

healthcare include drug development, management of medical data and personalized patient care and follow-up. Similarly, AI has been used for the development of classification models that has helped physicians' diagnosis of skin cancer, psoriasis et cetera. More recently, Al has found utility in contact tracing and prediction of global hotspots in the developing Covid-19 pandemic.

- Dr Sajal Mitra, former GMCH dean

oday the world faces globally the prob lems of depleted resources and pollu-tion due to following reasons: Unplanned and unscientific human activities has damaged the green cover and the biodi-versity. Depleted and polluted water resources, change in land cover, threatening food security, depleted fossil fuels, rapid increase in energy consumption, climate change inviting rise in temperature and high flood risk leading to threat of migration to populatio. Besides , there is risk to health to noise as well uncontrolled emissions of pollutants. Hence for sustainable develop-



ment technologies must aim at optimum use of resources. Environment being forerunner to econ-omy, all developmental activities must be subject ed to carrying capacity studies. Science based,

assessment of resources air, water, land, forests, fossil fuel, major and miner minerals and its availability for sus tainable consumption for development This integration of science and technology also provides technological alternatives for pre-vention, control and remediation of pollution to protect and preserve the environmen tal components. Solar energy based develop-ments, solar power, use of solar machinery, equipments and promote its utilization for food production through green cover and agriculture hold key to sustainable development. Technologies should optimize resource consumption and minimize residue and emissions

- Dr Satish Wate, former Neeri director

s the director of VNIT1 closely witness the trajectory of future tech-Anology ranging from machine learning, artificial intelligence, robotics to data analytics. This will invariably and permanently change the human behavior, from individual to society. We live in a coun-



try where human resource is our primary factor of pro-duction and agriculture. Hence while we want to enhance the productivity & efficiency or reduce the manual fatigue, manpower should not be displaced nor removed from the world of work. We at VNIT are committed to research, provide and transfer technology for sustainable tomorrow using traditional technol and also adopting non-conventional energy resources. VNIT generates its won one Megawatt solar energy and is role model for sustainable & green economy with usage of appropriate technology. Institut has received District Green Champion 2021-22 Award.

- Prof. Pramod M. Padole VNIT Director

There is no doubt that science and technology had been the vehicle of progress for mankind and it is sure to remain so



in future too. Improved quality of life, con-quering diseases, exploring the galaxy in a way no one could imagine ever. We are a totally changed world today. But science is a double edged sword. It's has a potential for keeping the humanness and emotionality at bay and can be ruthless too! The need of the hour is keep a

balance between the science and humaity Avancements in science make it a better place and not a battlefield. Dr Lokendra Singh,

Director CIIMS and senior neuro-surgeon.

cience and technology has Stremendous potential to help us create disruptive innovations. What happened in last 200 years, more happened in last 10
years. S&T will



help us to find different solutions. new approaches to the same problem. Technology science makes it possible

to quickly create models and test different scenarios and check sustainability aspects of solutions.
- Shashikant Chaudhary,

serial entreprenur

sustainable future has many aspects - longevity, healthcare, communications, democracy and planetary conservation are some of the



a sustainable future. Science creates research creresearch ates more sci ence and tech nology.

need to grab this opportunity and ride it to its fullest for our future.

Dr Vinay Nangia senior ophthalmic surgeon

eing an agricultural Scientist, I will restrict my comments to only agriculture. Achievements in Indian agriculture are attributed two things; 1) Technology led growth in productivity improvement in nearly all the commodities, and 2) Investment in agri-science and technology Technology on its own cannot be dis charged without science. and investment cannot be just made in salaries alone.

Self-reliance is driven by investment. AS per DSTs 2020 report from the allocated grants nearly,

62.4 percent goes defense miniscule of 37 percent of the allotted grants are given to other research agencies like; ICAR, ICMR, CSIR, DBT, DST and only 0.9 percent is allocated to IT, Renewable energy. Of this agriculture receives just one fourth. Economic Survey last year did flag off

the issue of low investments in science but this year it is not even men-tioned. The current level of agriculture investment is 0.4% which is lower than many low- and mid-dle-income countries. As per SOSI majority said that

science is the only hope for better future, there is no

scope for pseudoscience. So, country needs to invest more in R&D and simultaneously see the human resource is also created for better research as the num ber of universities and research institutes are increasing day by day.
- Dr CD Mayee

Ex-Chairman Agricultural Scientists Recruitment Board, New Delhi President South Asia Biotechnology Centre Jodhnur-Delhi



CSIR-National Geophysical Research Institute

A Premier Institute in Solid Earth Research

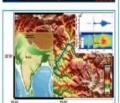


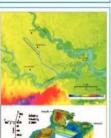
Exploring the Earth for 60 Eventful Years

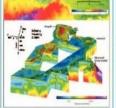
Established in the year 1961, the CSIR-National Geophysical Research Institute (CSIR-NGRI) has been carrying carries out innovative basic and applied research encompassing the fields of Geophysics, Geology, Geochemistry & Geochronology. The institute celebrated its Diamond Jubilee in the year 2021, the highlights of which included lectures by eminent international scientists, an international conference, MoU signed with Denmark and seeding of the new discipline of Environmental Sesimology.

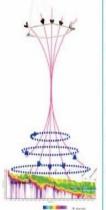


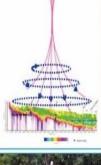
















Significant Achievements

- Developed first indigenous ground and airborne geophysical instruments including Drone based
- Gravity Map Series of India (GMSI)
- First Geochemical Baseline Atlas of
- Largest Seismological-GPS Network across the country
- State-of-the-Art observational and modelling infrastructure in crustal seismic studies
- Borehole seismological studies for reservoir triggered seismicity
- Expertise in sub-basalt imaging for oil and gas exploration
- Heli-borne electromagnetic surveys for aquifer mapping and exploration for strategic minerals in India
- Simulation of deep Earth processes responsible for geomagnetic field
- Pioneer research on crustal evolution and deformation



As closely interlinked processes of Nature more and more affect every aspect of human lives, studies of the Earth are essential for survival and well being. On this National Science Day, we pay homage to the planet which is our home and to the pioneers who have dedicated their efforts to discover its hidden treasures. In anticipation of a future of inclusive development it is also the time to deliberate on the science of tomorrow, its interactions with emerging technology, articifial intelligence and principles of ethics.

Dr. V. M. Tiwari Director

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