Newspaper Clips

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e-paper

Green revolution over, agri yields staring at dead end?

Overexploitation of groundwater coupled with rising temperatures may push agriculture to stagnation, says a satellite study mapping yields from 1982 to 2006

Amit Bhattacharya | TNN

The monsoon bounty this year is expected to put the smiley back on the agriculture output graph. The government has quickly announced a target foodgrain production of 244.5 million tonnes for 2010-11, 10mt more than the highest till date – 234.47mt achieved in 2008-09. Even in the wake of last year's monsoon failure, wheat production in the rabi cycle breached the 80mt mark for the first time ever.

But are these recent successes signs of a much-needed turnaround or are they temporarily masking a larger crisis in Indian agriculture that has been limiting growth in the medium term and threatening our food security?

A revealing international study that used US satellite data to track year-on-year changes in yields, warns that environmental drivers could be pushing agriculture towards stagnation. The findings indicate that India's Green Revolution may have reached unsustainable levels, at least in some parts of the country, and may hit a wall unless massive policy interventions address the situation.

The paper, Decadal Variations in NDVI and Food Production in India, published earlier this year in the open-access Remote Sensing journal, compares agriculture production in two decades – 1982-92 and 1996-06 – and finds a distinct slowdown in growth rates in the latter decade for both kharif and rabi crops. The study points to two worrying environmental factors, among others, that may explain the low growth during 1996 to 2006 – increasing pressure on groundwater due to unsustainable use and rising temperatures in the subcontinent.

The authors, researchers mostly based in the US, used a measure known as Normalized Difference Vegetation Index (NDVI), which calculates crop yields using satellite data. For the study, year-on-year data from the US meteorological sensor, the Advanced Very High Resolution Radiometer, was used.

As compared to the previous decade, the study found a 50% drop in growth rates in the kharif season during 1996-2006 and, more alarmingly, almost zero growth in the winter crop (rabi). The slowdown was more pronounced in the main foodgrain producing states in north India and in the central portion of the country.

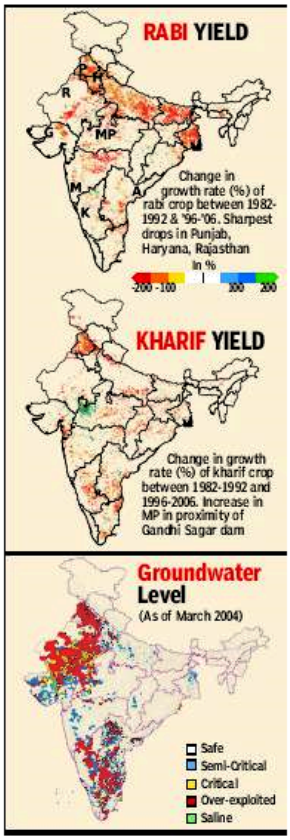
"Around 30% of the total cropland area of India showed a statistically significant decline in growth rate of greenness index during the rabi season," lead author Cristina Milesi from California State University, Monterey Bay, told TOI.

The rabi slowdown is significant because it's primarily dependent on irrigation, increasingly, groundwater. Not surprisingly, states such as Punjab and Haryana where rabi yields are stagnating, also overlap with regions where groundwater use has reached critical levels. The paper estimates that in the absence of any irrigation, it would require 30% to 150% increase in local annual rainfall to sustain the rate of growth in rabi crops seen during 1982-2002 in large portions of peninsular India.

"Our calculations of increase in crop water demand are greatest over the northwest and central-southern peninsula and coincide to a good approximation with areas mapped as suffering from groundwater overexploitation," the paper notes.

Says K Krishna Kumar, climate scientist at Indian Institute of Tropical Meteorology and one of the authors, "What could also be contributing to the fall in growth is accelerated warming since the mid-1990s. Our paper notes that over the past decade, average temperatures have increased by 0.25 degrees Celsius during the kharif season and by 0.6 degrees during rabi. We cite other studies which have linked the recent warming to a potentially reduced rabi crop yield by 6%."

BUMPER RUN OVER? In the absence of irrigation, around 30-150% increase in annual rainfall would be required to sustain the rate of growth in rabi crops seen during 1982-2002



How Sat Data Works

Healthy plants absorb light in the visible range while reflecting a large portion of near-infrared light. Unhealthy or sparse vegetation reflects more visible light, less near-infrared light. So, by analysing remote sensing satellite images in different spectral bands, the 'health' of crops can be measured over a period of time. This is the basis of calculating farmland yield through an indicator known as Normalized Difference Vegetation Index.

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'The US model of private health insurers is inefficient, expensive'

Joseph Stiglitz, the Nobel prize-winning economist has written several articles on the inequity in access to health and the flaws in the drug discovery process of pharmaceutical companies. On a recent visit to Delhi, Stiglitz spoke to ***Rema Nagarajan*** *about the negative role of patents in drug discovery and the pitfalls of private insurance in health:*

■ Why have you been pitching for a single payer system for health insurance rather than a system where several private companies compete?

The US model of private health insurers has been proven inefficient and expensive. Rather than provide better healthcare at lower costs, insurance companies innovate at finding better ways of discrimination. They are inefficient because they are trying to figure out how to insure people who don't need the cover and keep out people who need it. With many companies, they also need to spend on marketing and advertising. The incentives are all wrong and the transaction costs are very high and you have to give them a high profit. In health, social and private incentives are totally disparate. Competition does not work in healthcare especially in the health insurance market. Several countries like the UK, France and Sweden have a single payer system, differing only in the organisation of healthcare delivery.

Q&A

■ Several health insurance companies are setting up business here. Should India be worried?

India would be in a terrible mess, given the size of its population, if it went down the wrong route (of private companies for health insurance). They should learn from the mess that the US has got into. Once the companies start making profits, special interests in politics will come into play and it will be difficult to get them out. In India, given the disparities in income, a single system for delivery might not work. So, it will probably need a mixture of public and private provision or maybe public healthcare for basic clinics and reimbursement for others, or the UK model where provisioning or delivery is also through public institutions.

■ Are you against intellectual property especially in health research into medicines?

I am not against intellectual property (IP). But the benefits of IP have been exaggerated and the costs underestimated. IP creates monopolies. And it does interfere with economic efficiency by interfering with the flow of knowledge and the use of knowledge, particularly for developing countries. The TRIPS (trade-related aspects of intellectual property rights) agreement is trying to impose the same IP framework on everybody. The question is whether IP promotes innovation. Increasingly, the evidence is that it may actually impede innovation. It is leading to infinite negotiations around patents. More money is being spent on lawyers than on research. New ideas are the most important input into research. IP is making that input difficult to get. We need some IP. But we also need to find better ways of financing and incentivising research such as government-sponsored research.

■ Is it viable for governments to finance drug research?

Yes, public financing of drug research is financially viable. In a system where government pays for drugs, it is in effect, the government or the public who pay for hugely expensive drugs. Drug companies greatly exaggerate the cost, especially on research. If you broke down their costs, you would see that basic research is done by the government. The applied research of a particular molecule is mostly done by small companies, often linked to universities, which is still private. But the biggest cost is testing of the drugs and that is usually blown up and often includes promotion costs.

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Viking-Indian kid in Europe long before Columbus's 'discovery'

Washington: A new study has claimed that a Native American woman might have voyaged to Europe with Vikings five centuries before Columbus sailed the ocean blue.

Analysing a type of DNA passed only from mother to child, the scientists found more than 80 living Icelanders with a genetic variation similar to the one found mostly in Native Americans, reports the National Geographic News. This signature probably entered Icelandic bloodlines around 1000AD, when the first Viking-American Indian child was born, said the study authors.

Historical accounts and archaeological evidence show that Icelandic Vikings reached Greenland just before 1000AD and quickly pushed on to what is now Canada. Icelanders even established a village in Newfoundland, though it lasted only a decade or so. The idea that a Native American woman sailed from North America to Iceland during that period of settlement and exploration provides the best explanation for the Icelanders" variant, said the research team.

SETTING THE CLOCK BACK: A new study has claimed that a Native American woman might have voyaged to Europe with Vikings five centuries before Columbus sailed the ocean blue

"We know that Vikings sailed to the Americas," said Agnar Helgason of deCODE Genetics and the University of Iceland, who co-wrote the study with his student Sigrídur Ebenesersdóttir and colleagues. "So all you have to do is assume... that they met some people and ended up taking at least one female back with them. Although it's maybe interesting and surprising, it's not all that incredible," he added.

The authors admitted the case was far from closed. But University of Illinois geneticist Ripan Malhi agreed that the report holds 'strong genetic evidence for pre-Columbian contact of people in Iceland with Native Americans'.

Through genealogical research, the study team concluded that the Icelanders who carry the Native American variation are all from four specific lineages, descended from four women born in the early 1700s. Those four lineages, in turn, likely descended from a single woman with Native American DNA who must have been born no later than 1700, said Ebenesersdóttir.

The genealogical records for the four lineages are incomplete before about 1700, but history and genetics suggest the Native American DNA arrived on the European island centuries before then, said Helgason.

As further evidence, he noted that—though the Icelanders share a distinct version of the variation—at least one lineage's variation has mutated in a way that would likely have taken centuries to occur. This unique signature suggests that the Native American DNA arrived in Iceland at least 'several hundred years' before 1700. ANI

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CHANGING SCENARIO

New avenues

With the education system seeing a revamp, options are galore for the youth to choose an innovative and creative career

Neha Bhatia

Knowledge has always been the backbone of India's growth. World class education and strong knowledge base is what is required to channelize the youth in the right direction.

In India today there are more than 200 universities, including over 100 general universities, a dozen science and technology universities, around 7 open universities (distance education), about 30 plus agricultural universities, more or less 11 language universities, and 11 medical universities. And not to forget thousands of centres of education that are coming up daily in one or more towns of the country.

The right academic qualification followed by professional experience in a particular field is sure to make the youth ready to take charge of the economy. While the traditional courses have still retained their popularity, the new age courses too are fast making their mark in Indian education system. Let's have a glimpse of both

"Students going abroad for management institutes get the advantage of exposure to global career opportunities and education standards which put them at a point of advantage when selecting a career and corresponding jobs. Having said that, the Indian management institutions have, over the time, evolved and are equally competitive in shaping up bright career for their students."
-A.K. Shrivastava, Chairman, Asia-Pacific Institute of Management

THE AGE-OLD CAREERS

These are time-trusted career choices, which are followed by thousands of students in the country. Though these require constant effort and a lot of time to complete, they ensure a successful future with least of insecurities. The IT slump and recession, which gave a sour taste to many people abroad and to some in India too, the traditional courses are back to being on the popularity chart. Doctors, engineers, management or teachers, the demand for these courses is still there. Nonetheless, these courses too are not left untouched with change. Though these might be the traditional courses, the specialisations in it are seeing a stark change.

THE NEW-AGE CAREERS

There was a time when the only professions that parents knew were medicine, engineering or teaching. These were the handful of options that ensured a successful career for the children. With changing times and widened horizons, options in these traditional fields have grown by leaps and bounds. For instance, apart from the regular teachers, the demand for online tutors and teachers for varied languages is increasing. Similarly in engineering, specialisations vary from mechanical to telecom, which again is a growing segment. Doctors too are concentrating on specialisations in speech-language pathology, rehabilitation therapy, marriage-counselling, etc. Studies in alternate therapies and in subjects like cloud computing, too are becoming popular amongst students. Careers in Gemstone designing, escorting the expats, pet grooming, documentary making, archaeology, fresco artists, image makeover artist, dance therapists, etc., are fast coming to the forefront. Being what you imagine, no matter how weird it sounds, is possible in the changing India.

Education in India is seeing a revamp that was long desired by the youth. The success rate no longer depends on traditional education. With many exciting career prospects, that were hitherto considered unconventional, a world of opportunities beyond the traditional 'engineering' and 'medical' courses is awaiting the youth. In the era of change; a documentary maker is as successful as a doctor, a radio-jockey is as important an agent of change as a police officer and an art critic is as valuable as an engineer. With the demand of these new age careers increasing steeply, many institutions too are coming up in not only metropolitan cities but in tier-II towns too. From media schools mushrooming in every nook and corner and fashion designing courses becoming a rage, options are galore for youth to choose an innovative and creative career. Get set to face the competitive world by doing what you like and giving wings to your imagination.

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HIGHER EDUCATION

Destination India

India has established itself as the hub of quality higher education for Indian and foreign students

Neha Bhatia

Globally, Indian professionals are considered among the best in their fields and are in great demand due to their expertise. It signifies the inherent strength of higher education system and its ability to prepare young professionals to make a mark in the global scenario. From traditional to new age courses, education in India is growing by leaps and bounds and has seen a wide transformation in terms of its reach, academic excellence and infrastructure. The increasing number of students opting for higher education, including foreign students, clearly testifies the emergence of India as an educational hub for quality higher education.

The Educational structure in India which operates at all conceivable levels from pre-school to post doctoral is of monumental proportions. According to a World Bank report there are more than 7,40,000 formal schools; more than 3.6 million teachers are working on full time basis; there are more than 175 Universities offering under graduate and post graduate courses and about 6000 colleges affiliated to these universities. As India is a young nation, with those under 35 years of age constituting the majority, renewed attempts are also being made to bring them within the fold of quality education through several social development schemes. There are several fields of Higher education where Indian Universities and institutes of excellence have carved out a niche for themselves. These popular streams of higher education are:

BUSINESS ADMINISTRATION

As the economy grows, with it grows the need of professionals who can manage businesses efficiently. Be it any corporate house, it can not flourish without professional guidance. This clearly shows that successfully running a business enterprise need efficient management and effective administration. The wide range of opportunities available in this field have made it a sought after career option for the young generation. And with more and more businesses foraying into the Indian market, the jobs being offered are not only high in number but also are highly rewarding in terms of remunerations. There are many reputed institutes that offer bachelors and masters level courses in business administration in India. There are several diplomas, under graduate and post graduate programmes in management also. Though courses are available at all levels, having an MBA degree is a must to reach respectable positions. According to a recent survey conducted by the Graduate Management Admission Council (GMAC), India ranks number 4 on the list of the Top 10 preferred destinations for B-school aspirants all over the world. Institutes like Indian Institute of Management, Faculty of Management Studies in Delhi University, Indian Business School in Hyderabad are the dream destinations for those aspiring to stand out from the crowd in India and abroad. Some of the popular entrance exams are Common Admission Test (CAT) conducted by IIMs; Management Aptitude Test (MAT) by All India Management Aptitude Testing Service (AIMATS) New Delhi; Xavier Admission Test (XAT) by Xavier Labour Research Institute, Jamshedpur (XLRI); Joint Management Entrance Test (JMET) by Indian Institute of Technology (IIT); ATMA by the Association of Indian Management Schools (AIMS) are the major national level entrance examinations for admission to management courses.

ENGINEERING

The dynamic field of engineering has always been a popular and one of the most sought after career options. With several areas of specialisation, engineers have always been in great demand world over. Engineering as a stream has become highly specialised today and extends its branches catering to industries, technology and business. India has several internationally renowned engineering and technology institutes which attract students from all over the country and abroad. These include Indian Institute of Technology (IIT), Delhi College of Engineering, University Institute of Chemical Technology Mumbai, and many more.

MEDICINE

The education level and expertise required in this field are quite high. With some of the world's best medical colleges and institutes, India surely provides the best medical education in the world. The five and a half year degree course of MBBS (Bachelors of Medicine and Bachelors of Surgery) opens gates to become a doctor. But further specializations are available in varied fields like General Medicine, General Surgery, Paediatrics, Obstetrics & Gynaecology, Dermatology, Ophthalmology, Orthopedics, ENT (Ear, Nose and Throat), Psychiatry, Anaesthesiology, etc, for which a person has to do MS and/or follow it with an MD degree. Also by further studying for 3-5 years, super-specialisation can be done in areas like Plastic Surgery, Neurosurgery, Cardio-thoracic surgery, Conito-urinary surgery, Paediatric Surgery, Gastroenterology, Endocrinology and Clinical Haematology, etc. India has the privilege of housing world class medical institutes like AIIMS, Maulana Azad Medical College, Himalayan Institute of Medical Sciences, etc. Diploma courses in the field of physiotherapy, homeopathy, etc, are also for those looking to make a career in alternate therapies.

Competition for admission to India's best institutions is very intense - about two per cent of those taking admission tests for the prestigious Indian Institutes of Technology and Indian Institutes of Management gain admission - and other high-quality education options are needed for the many talented students who are turned away from these and other premier institutions. Moreover, the Indian student population is growing at a fast pace, and Indian institutions strapped for funds will be hard-pressed to create seats to accommodate the demand. Keeping this scenario in mind, the government too is working on increasing the number of institutions that provide state-of-art education. While six new IIMs will be set up in Jammu & Kashmir, Tamil Nadu, Haryana, Jharkhand, Chhattisgarh and Uttarakhand, four new IITs will be located in Orissa, Gujarat, Madhya Pradesh and Punjab. With increased number of institutes, the high level of competition that reigns in the admission process will also be eased out.

With India shining bright in the global education scenario, there is no dearth of opportunity for the young Indians.

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To Place or not to Place

During the fourth year of engineering students have to strike a balance between semester exams, placement interviews and preparation for higher studies

Shashank Sharma

Engineering students face the toughest time of their students career during their fourth and final year of the degree course. Seventh and eighth semesters are the time when campus placements take place and students become eligible to participate in them. Although backed by a relaxed curriculum with sufficiently long vacations, the fourth year, especially the seventh semester, gets a tad difficult for the average engineering student to get into the zealous competitive mood overnight.

The indelible facet of 4th year is the uncertainty which engulfs the individual. "Will I get a job by the year end?" "Should I focus on placements or aim for GRE, M. Tech., MBA entrance exams?" "How do I strike a balance between the semester, placements and other activities?" These are some of the questions that haunt the student day and night. Funnily enough it's at this crucial juncture that certain 'time management' tips given by the parents, which often seem unwarranted, come to the rescue. The seniors advice is usually not accepted by the typical rebellious college student, but always remember that when your parents ask you to switch off your television or turn off your computer they simply want you to manage your time well. Try sitting down with a calculator and add up the hours per week you spend watching television and chatting up with friends on the internet. If the figure is more than 21 hours a week you most certainly need to engage yourself in a more constructive activity. Proper time management is the only tool which will assist in wading through the quagmire of stress induced in a typical college student's life.

MAKE A BEGINNING

During the second year of engineering, simply start introspecting. Zero in on your interests and fix your goal. And to achieve that goal you must make a start by investing a certain number of man hours practicing and reading. Devise a time table and follow it religiously. For example if securing a technical job is your goal, get involved in student research projects. Here you will get a chance to physically implement your original ideas. However, if you wish to enter the management sector, enroll in an entrance test training institute. You must develop a healthy reading habit and make it a point to read up quarterly/ fortnightly/ monthly news magazines and newspapers.

Seventh semester is the time when students start competing for placements to net a job offer of their choice. If the right offer comes along they may take up the job immediately after completing their eighth semester. These placements depend a lot on the economic health of the country. While the placements season is always bright during the economic boom period, it really dries up during the recessionary times like the year 2009 when number of companies visiting the campuses for placements had drastically come down to a trickle. In addition to the above, to some extent, the successful placement season in any college also depends on the proactive approach of the placement cell of the college and the reputation and brand pull of the institution. All these inbuilt uncertainties of the placement season compel the students to also start exploring other options.

A general trend observed among engineering students is that in an attempt to further their options they also start preparing for MBA, M.Tech and MS entrance examinations. This activity invariably begins in the third year. And the major tussle inducing stress is the balancing act to be followed by the student while preparing for three crucial activities -- semester exams, placements and competitive exams. While one has to succeed in the semester exams, the success in other two activities - placements and qualifying competitive exams - or at least in one of these may lead to the student achieving the most important milestone of his career. And to reach this milestone it is crucial that the student is in a position to prepare for placements and entrance exams. A little bit of planning goes a long way in achieving the desired results.

MBA VS. PLACEMENT

Majority of the companies visiting college campuses conduct written exams which comprise both technical and aptitude questions. The study material which one goes through for CAT preparation also helps the student immensely in cracking the aptitude section of the written round of the placement. Questions from probability, speed, distance and time, sets and relations, logical reasoning, data interpretation, number system, algebra are lifted straight from CAT question banks.

You need to develop a habit of solving logic based puzzles regularly to keep your mind active. Do not forget to study for the technical round which is a major section of the written round. Purchase any question bank which contains ample objective questions with regard to the engineering discipline you are pursuing. Start solving the book two months prior to the onset of placement season. Solve all objective questions. This will help you revise all your subjects and if you put in further efforts into technical problem solving, you may even be fully ready to sit for various examinations conducted by public sector undertakings for students of engineering stream. And if CAT qualification is your dream destination, preparation should ideally be started at the end of your 4th semester.

GRE VS PLACEMENT

If the USA is on your itinerary then GRE is the route you must be dreaming. GRE preparation involves gobbling up a huge word list which eventually helps you in increasing your reading comprehension. The mathematics section included in the GRE examination is quite similar to the CAT pattern. Though the level of difficulty of the mathematics section in GRE is less than that encountered in CAT. Logic and data interpretation questions are a common feature of GRE. Develop a good reading habit. Newspaper reading is a must.

If you are regular with your GRE preparation, the cumulative effect would assist you greatly in your placements as well. Like all MBA aspirants remember to revise your semester subjects two months prior to placements season. Undertaking student research activities in the field of your choice will be a great boost to get into the university of your choice through the GRE route. Do not waste your second and third years. That is when you start executing your dream plan.

GDS & INTERVIEWS

After clearing the written examination of the placement exercise, the subsequent round would either be a group discussion (GD) or you could be directed straight to the interview round. Remember in a GD the recruiters do not judge you on the basis of the time you speak. They neither like vociferous, dominating and aggressive candidates, nor do they prefer submissive participants. To crack the GD round you must always present your point of view backed up by the facts and figures. Do not entirely rely on emotional, sentimental outbursts or statement.

We all know that healthy reading habit isn't exactly the forte of majority of engineering students. And often the shy ones are unable to communicate or voice their opinions. Many of them may not be very articulate and may even feel handicapped because may be their spoken English is not backed up by the Convent English. And they could be mortally scared of mispronouncing a word or two. Please leave all your insecurities behind. Remember that the recruiters are not looking for eloquent speakers only. They are looking for people who can assess, convey a point of view and derive conclusions. So if you are scared of public speaking, you must read regularly and build a knowledge pool. A person speaking up backed up by facts and figures, rarely faces derision or opposition from his competitors. During the GD whenever a discussion round is over, use the momentary silence to introduce more points. Try to steer the group discussion and allow others to voice their opinions. Remember never to pass personal comments and exchange abuses or sarcastic comments. This will be considered a gross breach of professional etiquettes.

PERSONAL INTERVIEW

For a personal interview, go with an open mind. You must be your natural disciplined self. The company must know the quality of human resource it is about to invest in. Do not memorize phrases which you may want to blurt out in front of the interviewer/s. Answer all questions coherently. Always mention your favorite subject quickly when asked. And if by some misfortune you do not know the answer to a question, simply admit it. You should be aware of all information you gathered during your summer/winter training. Often the dedication and perseverance of a student is judged based on the clarity of his answers pertaining to his training. And it is quite possible that the interviewer may ask whether you have a question to ask from them.

Here ask something interesting about the company which will reflect your interest in the company.

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CVC asks HRD min to probe fake institute at IIT-Kgp

Akshaya Mukul | TNN

New Delhi: The noose around IIT-Kharagpur for running a fake institute — Institution of Electrical Engineers (I) — is tightening. On Thursday, Central Vigilance Commission asked HRD ministry to investigate the scam, and submit its report within four weeks.

The action comes in the wake of IEE(I) students' allegation that they have been duped by the IIT faculty, who promised them the institute would be affiliated to IIT-Kharagpur. The ministry is likely to constitute a probe panel in the next few days.

TOI, in a series of reports, has exposed the involement of senior faculty members like A K Ghosh, former head of department of aerospace engineering, IIT-Kharagpur. It has also been reported that IEE(I) allegedly enjoyed the blessings of two former directors of IIT-Kharagpur — K L Chopra and S K Dube. IIT-Kharagpur had even "allotted" a staff quarter to the fake institute when Dube was the director.

Since the scam was unearthed, Ghosh has been suspended and an internal inquiry against him is being conducted. However, Ghosh claims that the institute was operational before he took over its reins, and IIT faculty members were not involved in its running.

While Chopra has maintained that all letters associating him with IEE(I) are forged, Ghosh countered that investigation would prove Chopra's involvement. The name of S K Lahiri, former deputy director of IIT-Kharagpur, has come to the fore for his alleged involvement as an adviser to IEE(I).

Independent agency to conduct CAT?

The Indian Institutes of Management (IIMs) are now working towards creating an independent agency to conduct Common Admission Test (CAT). So far the CAT has been conducted by the IIMs and each year one IIM take charge of the tests. The IIMs are also looking at taking the competitive exam to international students as well. CAT 2010, the entrance test for admission to seven Indian Institutes of Management and 100-odd other B-schools across the country, has been conducted by IIM, Lucknow. TNN

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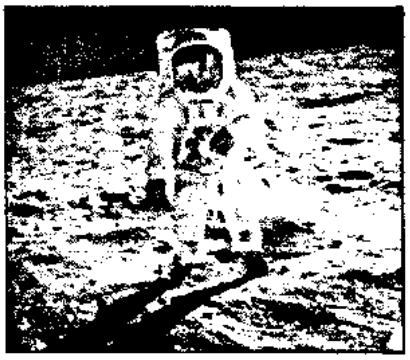
Manned mission to explore dark side of Moon

London: For the first time since the last Apollo landings of 1968s, scientists are planning to explore the dark side of the Moon using a manned spacecraft.

Engineers with aerospace giant Lockheed Martin want to send up astronauts into stationary orbit above the planet to study it further. The American firm hopes to use remote controlled robots dispatched from their spacecraft to collect samples and explore the South Pole-Aitken basin on the Moon — one of the oldest craters in the solar system, the Daily Mail reported.

Scientists hope the mission will serve as a test for a future possible mission to Mars as the six month trip would help study whether the equipment and the astronauts are able to endure long-term space travel. Nasa has in the past estimated that it could take around a year to complete a round-trip to the Red Planet and back, allowing a few months to collect samples.

Lockheed's plan involves using the combined gravity of the Earth and the Moon to ensure that its craft hovers on the same spot, within sight of both planets. It has pitched what it is calling the L-2 Farside Mission Orion spacecraft to do the job, which would house both astronauts and probes. If Nasa approves the mission, it will allow to see how humans respond to lengthy doses of deep space radiation, a key problem on a longer Martian trip.



ENDLESS NIGHT: The far side of the Moon is always turned away from us and at best we can only see one fifth of it

The first Orion missions to the moon's far side, viewed as feasible by 2016 to 2018, would accomplish science goals on the lunar surface using robotic rovers controlled by astronauts in space as practice for doing the same thing at Mars. The far side of the Moon is permanently turned away from us and at best we can only ever see one fifth of it. PTI

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Personalized shot: Tumour to cure cancer

Washington: Scientists have come up with a novel way to approach cancer treatment.

They say that a new process for creating a personalized vaccine may become a crucial tool in helping patients with colorectal cancer develop an immune response against their own tumors. This dendritic cell (DC) vaccine, developed at Dartmouth, was used after surgical resection of metastatic tumors to try to prevent the growth of additional metastases.

"The results of the study suggest a new way to approach cancer treatment," said Richard Barth Jr, Chief of general surgery at Dartmouth-Hitchcock Medical Center, who is the study's principal investigator.

Dendritic cells are critical to the human body"s immune system, helping identify targets, or antigens, and then stimulating the immune system to react against those antigens. The new research grew dendritic cells from a sample of a patient's blood, mixed them with proteins from the patient's tumor, and then injected the mixture into patient as a vaccine.

The vaccine then stimulated an anti-tumor response from T-cells, a kind of white blood cell that protects the body from disease. ANI

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Jet lag hits memory long after flight

Washington: A new study by researchers at the University of California has indicated that chronic jet lag alters the brain in ways that cause memory and learning problems long after one's return to a regular 24-hour schedule.

Twice a week for four weeks, the researchers subjected female Syrian hamsters to six-hour time shifts — the equivalent of a New York-to-Paris airplane flight. During the last two weeks of jet lag and a month after recovery from it, the hamsters' performance on learning and memory tasks was measured.

As expected, during the jet lag period, the hamsters had trouble learning simple tasks that the hamsters in the control group aced. What surprised the researchers was that these deficits persisted for a month after the hamsters returned to a regular day-night schedule.

What's more, the experts found changes in the brain, specifically within the hippocampus, that plays an intricate role in memory processing. They found that, compared to hamsters in control group, the jet-lagged hamsters had only half the new neurons in the hippocampus following the month long exposure to jet lag. ANI

TRAVEL TROUBLE

Hindustan Times
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CAT READY TO GO ABROAD IN 2011

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NEW DELHI: The Indian Institutes of Management may take their Common Admission Test to foreign shores as early as 2011, along with embellished student-friendly measures, the business schools and CAT service provider Prometric said on Thursday.

HT was the first to report – on July 2, 2010 – the IIM plan to take the CAT abroad, but today was the first time the country's premier B-schools have outlined any details of how they plan to go global.

B-schools from Dubai, Nepal and Sri Lanka have already written to the IIMs seeking greater collaboration, including the setting up of examination test centres in their countries, IIM Lucknow professor and CAT 2010 convener Himanshu Rai told HT.

"As far as preparedness goes, we can take the first steps beyond Indian borders by the 2011 CAT," Rai said.

Flush with success following a glitch free CAT 2010, the IIMs and Prometric on Thursday also announced key student-friendly measures that will be adopted to make CAT 2011 an easier experience for students.

CAT vouchers — which students need to buy to register for the examination — will be made available online in 2011, Rai said.

Hindustan Times ND 26/11/2010 P-1

FRAUD FINDINGS

Indian scientists worst offenders at faking research

Anika Gupta
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NEW DELHI: Indian scientists are more likely to cheat when reporting scientific results than scientists from other countries, says a new study in the US — a view endorsed by independent reviews.

"India does have the lowest (worst) E/F [error to fraud] ratio," said R. Grant Steen, the US-based consultant who carried out the study, published in the Journal of Medical Ethics.

Steen analysed the number of withdrawals, of academic papers related to the life sciences over the last 10 years. Of the 50 Indian papers withdrawn, 17 — or 34% — were for fraud of some kind, which includes copying findings, making up findings, or fudging findings.

Independent scientists confirmed the result. Bob O'Hara, who writes a statistics blog, has found Indian scientists' papers are five times more likely to be retracted for fraud than those by scientists of other countries.

Members of the Indian scientific community say there is a systemic problem. "Some of our senior scientists have been involved in fraud," said Dinesh Abrol, a senior scientist at the National Institute of Science, Technology and Development Studies in New Delhi.

Earlier this year, leaders of the nation's top science organisations, or academies, had to apologise when a high-level inter-academy report on genetically modified crops was found to contain lifted text.

There are no nationally framed rules for punishing research fraud. Institutions are responsible for their own scientists. The Society for Scientific Values tracks cases, but the organisation is made up of volunteers.

"There is evidence fraud has gone unpunished," said Abrol.

Economic Times ND 26/11/2010 p-11

17|MA|Pv

IIMs plan separate body to conduct CAT

Our Bureau
NEW DELHI

THE Indian Institutes of Management plan to create a separate entity to conduct and manage the Common Admissions Test (CAT) in future. IIM Lucknow director Devi Singh said in the Capital on Thursday that the IIMs want to set up a separate body within the IIM structure for CAT, to be run and managed by professionals. "It could be set up as an organisation under Section 25 of the Companies Act," he said. "The details are being worked out, but we definitely have plans in this direction."

Mr Singh added that a separate structure for CAT would help ease the pressure on IIM faculty members who help conduct and manage the test every year across the country. In 2010, IIM Lucknow professor Himanshu Rai was the CAT convenor. Mr Singh added that eventually, the idea was to make CAT like GRE or GMAT, which could be taken more than once a year.

HELPING HAND

A separate structure for CAT would help ease the pressure on IIM faculty members who help conduct and manage the test every year

More than 2.04 lakh candidates took the test in 2010, over a window period of 20 days, which ended on November 24. CAT was turned into a computer-based test, from the pen-paper format, in 2009. In its first year, it faced a lot of teething troubles which were mostly put down to technical glitches. This year, however, it was conducted successfully, without any technical problems.

According to Prof Rai, the IIMs, along with Prometric, are also considering making changes to the CAT format from 2011. These include facilitating the sale of CAT vouchers online and reducing the time period between reporting at the test centre and actually sitting to take the test—which, at present, is 90 minutes. "There is always room for improvement, and we will try to make the test more candidate-friendly," he added.

Indian Express, ND 26/11/2010 p-9

IIT-K panel for strict action on plagiariser prof, students

ANUBHUTI VISHNOI

NEW DELHI, NOVEMBER 25

STUNG by criticism for not taking stringent action against those found guilty of lifting articles, IIT Kanpur is set to crack the whip.

The institute's internal inquiry has found a professor and other authors guilty of plagiarism and advocated strict action against them.

A month ago, two articles published by the senior faculty member in international scientific journal 'Biotechnology Advances' were retracted on plagiarism allegations.

Highly-placed sources told *The Indian Express* that the inquiry committee has recommended a 'major penalty' against Prof Ashok Kumar of the Department of Biological Sciences and Bioengineering and other authors, students Seema Rani Jain, Ruchi Mishra and Radha Gupta.

A major penalty could mean either "dishonorable termination of service' or stopping all increments of the person concerned, including imposing a probation that would affect his career progression. The Board of Governors of IIT Kanpur will now take the final call.

The inquiry has concluded that while in one article, information was picked up from open sources such as Wikipedia, in another article there was serious plagiarism.

Pioneer ND p-9
26/11/2010

Ease the pressure

IITs should revisit the burden of their syllabi on students

ANURADHA DUTT

Another suicide in Indian Institute of Technology, Kanpur — the eighth in the last five years — has rekindled the debate on the exact reasons why some students, nursing high aspirations, opt out of not just the rat race but existence. Rather than reducing this tragic saga of self-inflicted deaths to a 'losers versus survivors' syndrome, the Ministry for Human Resource Development, teachers, counselors and policy-makers need to do some serious soul-searching on the approach to higher education. As such deaths seem to occur with alarming regularity in the IITs, the institutes at Kanpur and Chennai in particular, as per a senior IIT academic, there is a pressing need to identify the factors that push young minds over the edge. There is clearly an absence of psychological and emotional support on campuses and even at homes, with a narrow utilitarian worldview and exceedingly high expectations of their own and their parents being the driving force for most students. In this isolated soulless vacuum, the more vulnerable succumb when confronted by the spectre of failure.

The rise in suicides by school children in New Delhi in recent years spurred the ministry and concerned agencies to initiate changes in the examination system in a bid to reduce pressure on students. But the tendency to gloss over the acute stress and competitiveness that makes those, unequipped to meet the challenges at elitist and academically taxing places such as the IITs, completely give up or become traumatised for life means that such incidents will continue to recur. An excerpt from a letter, written in Bengali, by a girl who killed herself earlier in IIT Kanpur, is revealing. Written to her father, it states: "I will not be able to get B Tech degree this year. I am ashamed of it. So I am ending my life. Take care of my mother after my death".

Ironically, the girl, said to be a brilliant student, had cleared the Common Admission Test for admission to the Indian Institutes of Management. In the latest case, Madhuri Sale, a B Tech final year student from Andhra Pradesh, was reportedly average in studies and may have feared not getting a good placement. But are these reasons for suicide? Surely not since life has infinite options, especially in the era of globalisation. For Charles Dickens' Mr Micawber, perennial failure and optimist, there was always something good lying around the corner. And it did eventually materialise.

The recurrence of suicides appears to be a chain reaction. Some IIT students, who got in via quotas for historically disadvantaged groups, have blamed suicides by Dalit students in particular on upper caste faculty bias against them as much as the taxingly high academic standards. This pre-supposes that some students who get in via reservations and fail to perform well, are hamstrung by social background. In the event that they are forced to drop out because of their inability to clear the internal assessment system, their self-esteem is grievously injured. The case of a large number of students being made to leave IIT Kanpur on academic and health grounds early this year is cited by these disgruntled students as an example of the elitist bias. The lack of quota in faculty recruitment is also castigated. They seem to be indirectly lobbying for a more lenient assessment system so as to enable them to make the grade. However, those opposed to such a view observe that in the event that academic standards are lowered, the IITs would cease to be the 'premier' and 'prestigious' institutes that make them so desirable, in the first place.

Thus, the policy of quotas in higher educational institutions, pushed through by politicos, dependent on caste-based vote banks, appears to have become counter-productive for some sections. It is advisable that the HRD Ministry review this policy, in view of the grouses stated above. If academic standards are to be lowered so as to facilitate graduation for some, then policy-makers, given to vote bank politics, will bend to please. But it is no guarantee that breakdown and suicides will not occur. What is really required is for the ghost of failure and social rejection to be exorcised by counseling both students and their families about their options and ground realities.

Mint ND 26/11/2010 P6

GLOBAL PUSH

IIMs plan to set up a firm to run CAT

By Prashant K. Nanda
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NEW DELHI

The Indian Institutes of Management (IIMs) will form a company to manage the common admission test (CAT) and extend its reach by making it Web-based.

After successfully conducting CAT 2010, IIMs on Thursday said they want to take the test to the next level and make it a global brand by increasing its reach in India and overseas.

"We want to create CAT as an independent organization as we don't want faculties to be burdened," IIM Lucknow director Devi Singh said in New Delhi. "We will form a company or a registered society within the structure of the IIM system. It will be run by professionals to manage the CAT." He said all IIMs have formed a committee under the guidance of Pankaj Chandra, director of IIM Bangalore, for the purpose. "All of us want it. The effort is to move forward and make it better. It will happen soon," he said, without giving a time limit. The agency that conducts the tests will be directly in touch with the firm, so the faculty doesn't need to be involved. "The number of IIMs is growing, and coordinating is not going to be easy," Singh said. Currently, there are nine IIMs with four more in the offing.

Singh, whose institute was in charge of conducting CAT this year, said candidates faced no problems during the 20-day test window that ended 24 November. US-headquartered Prometric conducted CAT on behalf of the IIMs. "We learned from last year's mistake and took all steps for a smooth CAT—2,400 people were involved in the process of conducting the exam," said Soumitra Roy, managing director, Prometric India.

Himanshu Rai, convenor of CAT 2010, said there will be two reforms next year. First, candidates can purchase vouchers online, and second, the 90 minutes of preparation and authentication time before the real exam starts will be reduced. Generally, IIM aspirants fill the form online, but they go to designated banks to purchase a voucher as payment of the exam fee. Before the exam starts, the test conducting agency checks all credentials including biometric proofs to avoid any fraud.

As has already been announced, IIMs will take CAT beyond India. This will include Sri Lanka, West Asia and Nepal, as they have shown interest. Some French schools already accept CAT scores, and this effort will internationalize it further.

Asked about the dwindling number of CAT aspirants over the last two years, Singh said: "The euphoria to do an MBA (master's in business administration) has settled down both in India and abroad. The job market, recession, alternative careers are some of the reasons."

This year, 204,267 candidates enrolled for CAT against 242,000 in 2009 and 271,000 in 2008. CAT became a computer-based exam last year, but was marred by technical glitches resulting in widespread protests by students. IIMs conducted a second leg of CAT 2009 to help aggrieved students give the test.

Business Standard, ND 26-Nov-10 p-1

Tata taps MIT to light up low-income houses

Sun Catalytix is an energy storage and renewable fuels company founded by MIT professor Daniel Nocera. PHOTO: BLOOMBERG

LESLIE D'MONTE
Cambridge (US), 25 November

The Tata group is investing millions of dollars in Sun Catalytix — an energy storage and renewable fuels company — founded by a Massachusetts Institute of Technology (MIT) professor, Daniel Nocera. The aim is to introduce a low-cost solar contraption to power homes for the poor, primarily in developing countries like India.

The Tata group is well known for its bias towards low-cost innovations like the Nano car and Swach water filter.

Sun Catalytix's prototype can split hydrogen from any source of water, be it river water, sea water or even human waste. Once the water molecules are split into hydrogen and oxygen, the hydrogen powers fuel cells. Built at a cost of around $20 (around ₹920), it is expected to hit the market in 18 months. "We have the capability to power a household with just two bottles of water from any source," claims Nocera, who is also director of MIT's Solar Revolutions Project and the ENI Solar Frontiers Centre.

The reasoning is simple. Solar power, up until now, has been a daytime-only energy source. But storing extra solar energy for use when the sun sets is expensive. Sun Catalytix also believes batteries have a limitation when it comes to storing electrical energy. The company's prototype, hence, has taken a cue from nature — the process of photosynthesis — whereby plants and bacteria use energy from sunlight to produce sugar, which cellular respiration converts into adenosine triphosphate, or ATP, the 'fuel' used by all living things.

It was around two years ago that Nocera and Matthew Kanan, a post-doctoral fellow in Nocera's lab, had announced the details of the experiment. They have since refined it further. "By eliminating expensive precious metals and substantially reducing costs, our technology promises to enable the conversion of electrical, solar or wind energy into storable energy at low cost," says Nocera.

The contraption, according to Prof Nocera, has advantages over current electrolysers, which split water with electricity and are often used for industrial purposes. But they are not suited for artificial photosynthesis because they are very expensive (around $12,000 per Kw) "and require a highly basic (non-benign) environment that has little to do with the conditions under which photosynthesis operates".

Tata Sons Chairman Ratan Tata is understood to be taking a personal interest in the project, while simultaneously providing personnel from his group companies to make this project successful. The Tata group has a joint venture with BP Solar, Tata BP Solar, which is one of the largest solar companies in Asia.

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Tata taps MIT to light up low-income houses

RALF SPETH, CEO OF Jaguar Land Rover (a Tata company), is on the board of Sun Catalytix. While the Tata group has officially pumped $9.5 million into the company, people with knowledge of the development say the investment is much more and that Ratan Tata is a co-owner. Other investors include Polaris Venture Partners. Amir Nashat is acting CEO of Sun Catalytix.

In July 2009, the government unveiled a $19-billion plan to produce 20 Gw of solar power by 2020, wherein solar-powered equipment and applications would be mandatory in all government buildings, including hospitals and hotels.

Further, in the 2010-11 Budget, the government had announced an allocation of $227 million towards the Jawaharlal Nehru National Solar Mission and the establishment of a Clean Energy Fund.

Currently, though, solar power is much more expensive than power generated by other sources of energy like wind, coal and water. The government, therefore, has to subsidise solar power.

Meanwhile, other companies like Amyris of the US are also developing genetic-engineering technologies that change the way microbes process sugar, turning them into "biorefineries" that could provide alternatives to products derived from petroleum.