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EMPOWERING TIMES



THINKING ALOUD

Radical Innovation in Indian Agriculture: when will the wait end? - Jay



PODIUM

Interview with Mr. Raju Barwale, Managing Director, Maharashtra Hybrid Seeds Company (Mahyco)



WE RECOMMEND

TED Talks - The Official Guide to Public Speaking - Chris Anderson



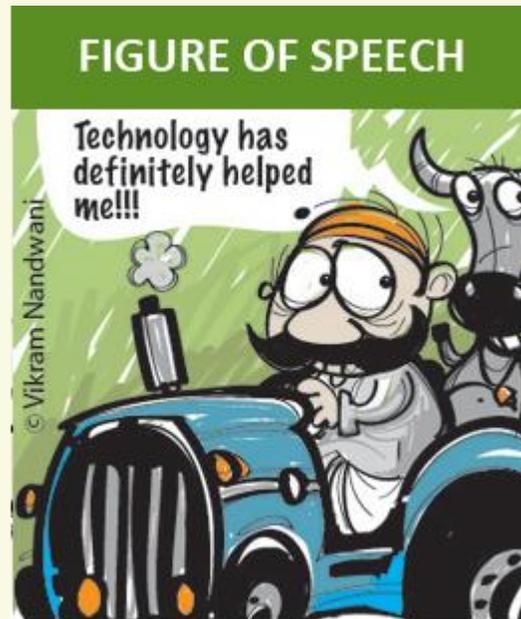
STANDING OVATION

Pratsahan & Kamalini Training Centres, New Delhi



Dear Reader,

The Indian Agriculture sector has been the backbone of the economy, and continues to be so given that over 58% of rural households still depend on this sector as a source of their livelihood. The importance of this sector has been highlighted time and again by the Government of India; in its Budget 2016-17, it planned a plethora of steps for the sustainable development of this sector and proposed a series of measures to improve Agriculture by increasing farmers' welfare, 100% village electrification targeted by mid-2018, and crop insurance schemes, among many other initiatives.



However, all these are set against a backdrop of long-standing challenges of unproductive farming, lack of irrigation and the continued dependence on the mood swings of Mother Nature. No doubt, the sector has come a long way but has a long road ahead. While challenges persist, like in any sector, the key here for players in this segment is to be proactive. Increased investments are expected to underpin this sector to generate better momentum in the next few years. Case in point is China (read: Mao's dictum of "walking on two legs"), which envisages a balance between Agriculture and Industry. India can well be on its way by learning from China's strides not only in the Manufacturing but from its remarkable Agriculture sector as well. Over the past few decades, rapid Agricultural growth has allowed the Chinese economy to pick up pace without stoking inflation. The country has put in place several incentives for small-scale farmers and supported them through sizeable public investments in Agriculture and rural electrification.

Globally, the rise of a new sector, Agriculture Technology (AgriTech), has revolutionised the traditional Agriculture sector. Techniques such as rain through cloud seeding, monitoring the health of crops, water recycling, drone farming, among others, have eased the life of farmers and have had a huge impact on the sector's productivity as well. Not far behind, the Indian Government has launched initiatives such as the Kisan Suvidha application and the National Agriculture Market (NAM), which is a positive indicator for growth in the adoption of technology in the Agricultural space in the country. Surely, all these will lead the Indian Agriculture sector towards another revolution, (the first being, Green Revolution)!

Additionally, the Make in India initiative is a platform with great potential to

recognise and champion Indian farmers, coupled with proactive government policies. Factors such as reduced transaction costs and time, improved port gate management and better fiscal incentives apart from better irrigation and storage facilities, and the growing use of genetically modified crops (a theme which is debatable and yet promising) among others, would contribute to the sector's growth.

There is a wave of renewed revitalisation in the Indian Agriculture industry with many companies and start-ups determined to help farmers to modernise the current Agriculture landscape. Riding with this optimism, ET this month features the subject - 'The Changing Face of Indian Agriculture.'

In **Thinking Aloud**, the current state of the Indian Agriculture sector is placed in the limelight by Jay. While the sector has contributed to the country's growth engine, the sector is still far from a radical revolution to overcome various causes of low farm productivity. It is only a matter of time when traditionalists will have to adopt new ways.

On the **Podium**, this month, we get in touch with Mr. Raju Barwale, Managing Director, Maharashtra Hybrid Seeds Company (Mahyco). He throws light on the productivity of the Indian Agricultural sector, the adaptive role of farmers and the importance of R&D in every sphere of the economy, especially the Agriculture sector.

In **We Recommend**, Meeta reviews Chris Anderson's book - 'TED Talks: The Official TED Guide to Public Speaking' - a read which will help guide anyone giving a speech, either prepared or at the spur of the moment. The author spells out critical elements that will help to make a connection between the speaker and audience members to create an impactful talk.

In **Standing Ovation**, we feature Delhi based Protsahan & Kamalini Training Centres which are involved in the upliftment of women hailing from the underprivileged sections of the society.

Take a look at Vikram's tech-savvy farmer in **Figures of Speech**!

As always, we value your opinion, so do let us know how you liked this issue. To visit our previous issues you can visit the Resources section on the website or simply **Click Here**. You can also follow us on **Facebook, Twitter, Linked In & Google+** - where you can join our community to continue the dialogue with us!

THINKING ALOUD

Radical Innovation in Indian Agriculture: when will the wait end? - Jay

Listen to any politician & you will hear the truism that India is an Agricultural nation and they are committed to the cause of farmers. However, the plight of the farmer does not attract much proactive steps from the government as the notion of support is far removed from the ground reality. Yes, new schemes are announced periodically (case in point, the new insurance scheme of the government) but witness the endemic issue of farmer's suicide across some of the bastions of farm territories (Vidarbha, Telangana, Karnataka, etc.), and you realize that there is no willingness to make a true break from the past.

While the challenges before the farm sector are plenty, a key reason is that governments of different hue have failed to understand that farming methodology has to move with the times. Unfortunately, it has taken severe crisis - as in the days of historic famines of the 1940s and 1960s - before any radical and innovative steps have been taken. The Green & White Revolution are examples of such responses to desperate situations.

Official numbers indicate that more than 58% of the rural households still list Agriculture as their chief source of income. And, their contribution is significant. Apart from the traditional strengths in Spices (which continues to be a major export item), today India has become the second largest fruit producer in the world. What is not known enough is that Agricultural items (such as canned, dairy, processed, frozen food, fisheries, meat, poultry, and food grains, etc.) constitute the fourth largest category of exports (about 10% of overall exports). With the world's largest bovine population, India also is the largest milk producer (18.5%) in the world.

While all these statistics are certainly laudable, they hide more than they reveal. There are indeed various causes for low farm productivity - technical, infrastructural, human, etc. One of the most controversial issues in this arena is the role of next generation technology in Indian Agriculture, specifically whether Genetically Modified (GM) seeds should be allowed more widely or not.

Positions in this debate get hardened and very soon rational discussions give way to emotional outbursts. A recent column by the well-known commentator, Swaminathan Aiyar, is a case in point. His espousal of the need for modernization in Agriculture attracted the attention of trolls who have accused him of being a spokesperson for the 'GM lobby'. Aiyar had pointed out in his piece that there is a strong global 'NGO lobby' which has stymied the introduction of high yielding GM seeds in India, in the edible oil and other segments too. Caught in the crossfire of this debate is the Indian farmer who worries as he loses his livelihood and sees a constant

downslide in his income, year after year, while imports of food grain, vegetables & edible oils continue unabated from global sources, ironically some from GM sources.

A point to note is that GM crops continue to gain acceptance in more nations, including in our neighborhood, chiefly Bangladesh. Suffice it to say that some of those crops will come over the border for sure not too far down the road! Adding muscle to the GM corner is the fact that technology has modified all aspects of human life - not just now - but from a long time before. The Green Revolution in Agriculture also faced its critics and over the years has now been acknowledged as a major contributor in the fight against hunger and famine. Yes, there are forces (interestingly strange bedfellows: those harking back to traditional Indian heritage and global voices against technology!) who have come together in blocking the front-door to new innovations in seed technology. However, at the risk of annoying the traditionalists, I am clear that progress is inevitable in this field too. Given a choice, the Indian farmer will accept the new generation seeds both for vegetables and for other crops. And, this will offer a new lease of life to the farm sector.

The moot question: when? Ah, well, that is a million-dollar question! Sadly, the track record of Indian policy makers is that we prefer a reactive response and only a series of acute crises will provoke a forward step. And, thereby, the Indian farmer may well miss the opportunity to be the one to feed the world.

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PODIUM

Interview with Mr. Raju Barwale - Managing Director, Maharashtra Hybrid Seeds Company (Mahyco)



Mr. Raju Barwale

Mr. Raju Barwale is leading Mahyco, a well-known innovative seed company in India as Managing Director. The company is the flagship concern of the Barwale Group and was founded in 1964 by Dr. B. R. Barwale, who is widely regarded as the Father of the Indian seed industry. While Dr. Barwale laid a strong foundation for Mahyco with his visionary leadership, under the stewardship of Mr. Raju Barwale, the company expanded rapidly to reach and make a difference to the lives of over 10 million farming families out of an estimated 110 million farming families in the country, over last four decades of his association. Today, Mahyco enjoys the trust and confidence of its customers for quality and innovative seeds.

Mr. Barwale has pioneered in bringing in the best of the technologies in seeds to Indian Agriculture. Thanks to his persuasive leadership, Mahyco introduced India's first Biotech crop Bt Cotton, in collaboration with Monsanto in 2002, helping the country to become the global leader in cotton production and exports. In keeping with the strong belief of the company in applying science and technology for resolution of challenges facing Indian Agriculture, Mr. Barwale has built a research and development facility of global standards with several innovative technology solutions being worked upon and which are in various phases of regulatory evaluation.

ET: India is still largely an Agricultural economy and experts argue that our Agricultural productivity is sub-optimal. What are your thoughts in this regard? And, if you agree with this view, what can be done to raise farm productivity?

RB: Agriculture continues to be the mainstay of India, even after close to seven decades of Independence. While its contribution to overall GDP has come down to less than 14%, the fact that it employs close to 50% of our population makes it critical for equitable distribution of economic development and growth. For the same reason, growth of Agriculture is vital for the growth of many other sectors of the economy.

Our Agricultural production has improved over the years, making us the global leading producer of some of the Agricultural products like milk, cotton, tea, rice, fruits and vegetables, etc. However, our productivity in most crops are lower than the global averages, thus providing an opportunity to increase our production further. For instance, our rice productivity per hectare is 3,623 kgs compared to 6,717 kgs in China. Our wheat productivity per hectare is 3,154 kgs compared to 6,668 kgs in China. In cotton, it is about 540 kgs of lint per hectare compared to 1,900 kgs per hectare in Australia.

We are naturally endowed with the second largest arable land in the world and

abundant sunshine through the year. Hence, our Agricultural productivity can be improved substantially, if we adopt optimum use of modern inputs and good Agricultural practices. We need to increase the area under irrigation both through expansion of irrigated areas and improving efficiency, which will help us to minimise our dependence on the monsoons. This should be supported by adequate market and policy infrastructure to help farmers realise remunerative prices for their produce, thereby incentivising the farmers to produce more.

ET: As a leading firm that has played a large part in raising Agricultural incomes across India with multiple offerings of hybrid seeds, what has been your experience with the Indian farmer? How open is he to new methods of farming, use of technology, mechanisation, storage, etc.?

RB: The Indian farmer is very worldly wise and has therefore, adopted modern technologies/methods/practices that enhance yields and income. However, he is very cautious in nature and very good at managing risks - risks of unpredictable weather, crop failures, markets and prices, etc. In other words, he evaluates risks and rewards carefully while adopting new technologies. Let me share two examples. In case of cotton, Bt cotton was adopted by over 90% of the cotton growing farmers, (which is a global record for the fastest technology adoption) as they were convinced about the effectiveness of the technology and its impact on economics after evaluation in the initial years. However, in case of hybrid rice, inspite of heavy governmental support in the form of subsidised seed prices, adoption is less than 5% even after two decades of efforts. The reason is farmers' perception of additional income/rewards vis-a-vis produce price risks, etc. is not favourable. As the industry understands the needs of the farmers better, with improved product offerings to meet their needs, the use can go up in the coming years.

ET: Why is the subject of genetically modified foods so polarising amongst policy makers & lay public when we have accepted the role of science in all other spheres of our existence?

RB: Genetically modified food evokes polarised debates all over the world. In my view, there are two key reasons for this. One is due to inadequate/mis-communication about the safety and efficacy of crop bio-technology. Safety of crop bio-technology on a scientific basis is a settled matter. There are over 2,000 scientific research papers available about the safety aspects of crop biotech and the world's leading scientific bodies have endorsed their safety. Since, over two decades of introduction of biotech crops in the world, more than a trillion meals containing biotech food have been consumed without a single documented case of adverse effects. However, there are certain interested sections amongst the civil society groups who would like to perpetuate this misconception about its safety. This needs to be countered with adequate communication, particularly from publicly credible sources like the Government.

Another reason for the opposition is ideological. Certain groups consider this act as playing God and oppose it while some groups do not want to adopt Agricultural technologies from another country or from an MNC. In today's global world, we are happily accepting modern technologies from other countries in information technology, telecommunications, pharmaceuticals, automobile industry, FMCG, etc., including the defence sector. It is intriguing as to why Indian farmers are being denied access to modern technologies on the basis of such ideologies. Even during the Green Revolution, we accepted the Mexican dwarf gene in wheat and improved rice varieties from the International Rice Research Institute (IRRI), Manila, for improving our food grain productivity. Today, Agricultural commodity markets are globally linked. It is not in the economic interest of our farmers to deny tools of productivity improvements to him, while it is available to farmers elsewhere in the world, to ensure competitiveness and profitability of our farmers.

ET: Research & Development (R&D) is vital to every sector's growth. How intense is the private sector's R&D efforts in the Agricultural sector or is the primary role played by government research institutions still?

RB: Agriculture is vital for the social and economic well-being of our nation and ensuring food security for our population. Therefore, it is vital that both public and private sectors participate in the R&D efforts to improve crop productivities vigorously. The private sector works closely with various Government institutions to take the fruits of such R&D efforts to farms.

For the private sector to invest more into crop research there has to be increased levels of encouragement from the policy makers. The Agricultural sector is highly regulated, and therefore, entails relatively higher risks in terms of regulatory uncertainties and decision making. If the policy environment and the regulatory road maps are predictable, it will help to attract greater investments in R&D in this sector.

ET: Your company Maharashtra Hybrid Seeds Company (Mahyco) began operations way back in the 1960s and since then has come a long way, and has now gone overseas as well. What have been the major turning points in the company's history?

RB: Dr. Barwale, my father who started the company in 1964 believed that crop productivity improvements could be achieved through the application of science in Agriculture. This has been our core belief since then. Thus, we have always aimed to leverage technology to bring innovative and high yielding products to Indian farmers. Mahyco has been the first Indian company to introduce hybrid seeds for sorghum, pearl millet, sunflower, cotton (GMS/CMS based), and several vegetable crops. We also have the distinction of successfully developing and commercialising the world's first CMS based wheat hybrid in 1996.

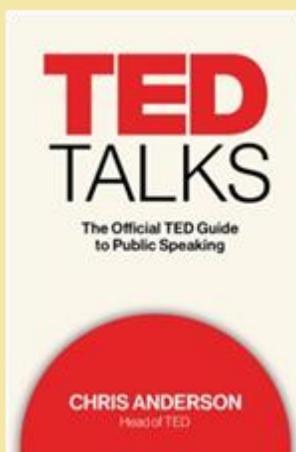
Another important milestone was the successful introduction of Bt cotton, India's first and only Biotech crop in 2002. We are proud of the fact that this technology enabled India to become the second largest global exporter of cotton from being a net importer prior to its introduction. India's share in global production of cotton has gone up from 12% in 2002 to 25% in 2014. What is more fulfilling for us is that over seven million farming families, most of them being small and marginal farmers, have benefitted immensely by the use of this technology. We have several such new technologies - water use efficiency crops, nutrient use efficiency crops, insect tolerant crops, etc., which can potentially deliver similar benefits to our farmers. Besides, there are technologies available which can have a dramatic impact on the production of pulses and oilseeds in the country. We are optimistic that our policy makers will facilitate introduction of such technologies sooner than later, in the larger interest of Indian Agriculture.

We have started to expand beyond India, into South East Asia and Africa, a couple of years back. We would like to take our experience and knowledge of the hybrid seed business to those geographies for the benefit of farmers there, where farmer profiles and farming challenges are comparable. We believe that such experiences outside the country would also help us learn from their experiences which can be used in India. We would expect substantial future growth of Mahyco to come from such overseas expansion, apart from growth in our Indian operations.

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WE RECOMMEND

TED Talks - The Inside Story!



There are some books which you just cannot put down once you start reading them. "TED Talks" by Chris Anderson is one of them. Especially so, because I am one amongst those millions of people who watch these talks quite regularly and have been so inspired by them, always wanting to know how these speakers do it so wonderfully and mesmerise the audience. "TED Talks" gives you an insight to all the stories about creating talks that are unforgettable.

For all of you who may have not heard of TED, it is a non-profit organisation which creates a platform for sharing worthy ideas globally in the form of short (18 minutes or less) powerful talks. TED began in 1984 as a conference where Technology, Entertainment and Design converged, and today covers almost all

topics - from science to business to global issues - in more than 100 languages. Chris Anderson, the author of this book took over TED in 2001 from Richard Saul Wurman.

It begins with Anderson looking back at more than a decade of talks and dissects the critical elements that create the magical connection between the speaker and the audience. What I discovered after reading this book was that one of the top fears of most people is public speaking and this is because it matters the most as to how others think of us. So how does one overcome that? According to Anderson, it's not so much about confidence or stage presence but it's about having something worthwhile to say. Referring to a great talk being like a journey, he quotes TED speaker Tierney Thys, "Like all good movies or books, a great talk is transporting. We love to go on adventures, travel some place new with an informed, if not quirky, guide who can introduce us to things we never knew existed."

One of the key ingredients for a successful talk is a through line and according to Anderson, unexpectedness is critical to a successful through line, and has shared some examples, a classic one being, "More choices actually make us less happy." Connection and humour are some other important elements that contribute towards a successful talk.

The tools recommended in this book for a successful talk are actually very simple and basic but we tend to overlook these. What Anderson recommends is asking yourself if you have anything to share and not promote, make a human connection by using intriguing and provocative questions, use storytelling, keep it simple and focussed and not cram too much in and finally nothing works without a lot of practice, so practice hard.

Equipped with tools that can empower any speaker, this power packed book makes you feel that someday, even you can go and deliver a TED talk. Anderson has shared some great insights from favourites like Sir Ken Robinson, Dan Gilbert, Monica Lewinsky, Sophie Scott and many more - all the tools - right from creating a great content to being the most effective on stage. A must for your library.

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STANDING OVATION

**Protsahan & Kamalini Training Centres, New
Delhi**



The sorry state of many underprivileged women in the NCR region inspired three women of the Educational & Development Initiatives (EDI), a registered society which promotes social values among the youth, to start a new organization dedicated only for underprivileged women.

Thus began Protsahan - a charitable trust which was created in 2003 for the empowerment of migrant women, domestic workers, school drop-outs and any other woman with limited educational opportunities.

The NGO eventually launched its first Kamalini Vocational Training Centre in the urban village of Shahpur Jat in 2007 and later opened a second centre in 2008 in Kishangarh. In 2010, Protsahan and EDI signed a MoU to jointly develop a much bigger Kamalini Vocational Training Centre on the Gurgaon-Sohna Road, for which EDI acquired 5 acres of land. Currently, the centre is under construction. Since then, Kamalini has prepared young women to become financially independent, enabling them to better manage their households by learning in a friendly environment.

Kamalini is designed for women who have stopped studying. These women are mainly migrants from rural areas, domestic staff and more generally women whose education and job opportunities are restricted because of sex discrimination.

This NGO imparts professional training to young women from underprivileged sections aged between 18-25 years, so that they may be able to have the personal and educational means for obtaining a job.

Two types of trainings are available in the centres:

- Basic education: with the National Institute of Open Schooling (NIOS), tutoring and personal development, English and Hindi classes.
- Professional training: with pattern cutting and tailoring, basic computer skills, and nutrition, cooking and housekeeping.

For more information on Protsahan & Kamalini, please check out their website: www.kamalini.org

Protsahan & Kamalini deserves a Standing Ovation for their noble cause!

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This month Rupesh wandered off to Maharashtra's oldest and largest national park, the Tadoba Andhari Tiger Reserve in the Chandrapur District of the State, and captures a picture of a Tiger in all its glory. The national park derives its name from the local tribal God "Taru", while the Andhari River flowing through the forest gives the Sanctuary its name. Currently, there are more than 80 Tigers in the Reserve.

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