

L3-2011



Kiran Mazumdar-Shaw

INDIA'S INNOVATION CHALLENGE FOR INCLUSIVE DEVELOPMENT

THE FIRST LAKSHMI NIZAMUDDIN MEMORIAL LECTURE

12 August, 2011



NATIONAL INSTITUTE OF ADVANCED STUDIES

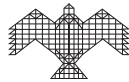
Bangalore, India

INDIA'S INNOVATION CHALLENGE FOR INCLUSIVE DEVELOPMENT

The First Lakshmi Nizamuddin Memorial Lecture

12 August, 2011

Kiran Mazumdar-Shaw



NATIONAL INSTITUTE OF ADVANCED STUDIES
IISc Campus, Bangalore-560012

© National Institute of Advanced Studies 2011

Published by

National Institute of Advanced Studies
Indian Institute of Science Campus
Bangalore - 560 012
Tel: 2218 5000, Fax: 2218 5028
E-mail: admin@nias.iisc.ernet.in

L3-2011

ISBN: 978-81-87663-50-8

Typeset & Printed by

Aditi Enterprises
Bangalore - 560 023
Ph.: 080-2310 7302
E-mail: aditiprints@gmail.com

INDIA'S INNOVATION CHALLENGE FOR INCLUSIVE DEVELOPMENT

Ladies & Gentlemen,

It is indeed a pleasure and a great privilege for me to deliver this memorial lecture as a tribute to Lakshmi Nizamuddin, a woman of rare virtue and formidable stature for whom I had the deepest admiration. Lakshmi Nizamuddin was a woman who was not in any way handicapped by her disability but rather displayed courage, passion and amazing strength to pursue agendas that were of significant socio-economic importance and transformational in their objective. She committed herself to the cause of seeking social equality for the Handicapped and was President of the National Society for Equal Opportunities for the Handicapped, a post she held from 1975 and organized the first ever National Sports for the Handicapped in Bangalore the same year.

I was particularly impressed by the way she directed the school for impaired speech and hearing and organized talent contests for the handicapped and even ensured job placements for the disabled. Her unstinted support for those that were disadvantaged because of disabilities saw her fight for seat reservation at professional colleges and even their participation at Republic and Independence Day parades. Apart from this deep commitment to various causes, she engaged herself on various other fronts from being a member of the Karnataka Film Censor Board to The Telephone Advisory Board, Indian Red Cross and many other distinguished bodies. Lakshmi Nizamuddin was truly a woman of substance who drew much of her strength from her husband, Rahim Nizamuddin, a man of rare integrity who I have had the privilege of knowing as a friend and someone whom I have deeply admired for his sense of duty to his office and society at large. Thanks to Rahim Nizamuddin, Bangalore was the safest and most secular city in India when he was the Director General & Inspector General of Police. Lakshmi and Rahim Nizamuddin along with their son, Rahil have epitomized the secular tenets of Indian society particularly Bangalore which has always been held up as an example of an open and cosmopolitan city.

When I was asked to deliver this memorial lecture, it was difficult to choose an apt subject and after much deliberation, I thought I should talk about how challenges can be converted into opportunities just like Lakshmi Nizamuddin did all her life. More importantly, how such opportunities can deliver transformational change through innovative thought and action just as Lakshmi did with the challenge of disability.

As an entrepreneur, I have always been driven by a spirit of challenge. Challenge I believe, brings opportunity which in turn drives innovation. This I believe is the wheel of development and progress. India in this context is a country faced with endless challenges which is what, in my opinion, makes it a land of great opportunities. It is for us to convert these opportunities into outcomes



through innovation that can turn the wheel of development and progress.

India's inclusive development agenda has to address a number of daunting challenges:

1. Poverty: 80% of our population live on less than \$3 a day.
2. Healthcare: 65% of our population do not even have medical access
3. Sanitation: Only 19% of our people have access to sanitation
4. Education: India has a 74% literacy rate well below the world average of 84%. India accounts for 35% of the world's illiterate population.
5. Infrastructure: India's 3.3 million km road network is the 3rd largest in the world but only 14% of this conforms to International Road Standards.
6. Telecommunications: India has a tele-density of 74% and the world's largest mobile subscriber base. Bandwidth is a huge challenge.
7. Agriculture: 69% of our population depends on agriculture for their livelihood. India's agricultural productivity is amongst the world's lowest.

8. Electrification: 400 million Indians in over 18,000 villages have no access to electricity.
9. Nutrition: 22% of children in India are severely under-nourished. India ranks 62 out of 81 countries as per the Poverty & Global Hunger Index even below Ethiopia!

To add to these challenges are those of terrorism and corruption!

On the other hand, we see India as a rising, vibrant economy with the potential of being an emerging economic power.

- ◆ The 4th largest economy in terms of Purchasing Power Parity.
- ◆ The second fastest growing economy after China.
- ◆ The youngest population demographics with the fastest growing incomes and aspirations.
- ◆ Growing leadership in several Industry sectors: Automobiles, Aluminium, IT, Pharmaceuticals, Steel etc.
- ◆ Largest milk producer in the world.
- ◆ The largest mobile phone subscriber base globally.
- ◆ An emerging nuclear energy leader.

It's evident that unless we overcome the challenges that I posed earlier on, we cannot realize our aspirations to become a true global power. It will take enormous innovation and out of box thinking to convert these challenges into successful outcomes for a country as large as India.

I would like to focus on just 2 of these challenges and discuss a host of innovative solutions that could provide us with transformational outcomes.

1. Poverty
2. Healthcare

POVERTY

Let's understand the magnitude of this challenge:

- ◆ 80% of our population lives on less than \$3 a day
- ◆ 69% depend on agriculture for their livelihood
- ◆ 50% of them are illiterate or poorly literate
- ◆ 18,000 villages are devoid of electricity
- ◆ 81% lack access to sanitation
- ◆ 65% lack access to healthcare
- ◆ 47% of children in rural India are under-nourished

It seems like unimaginable hopelessness. It almost seems too dire to do anything about. It even leads people to believe that there is no point in wasting time to alleviate poverty when urban India is bounding along with rapid strides of prosperity and progress. But in this morass of challenges lie enormous opportunities that will add to our prosperity and inclusive progress.

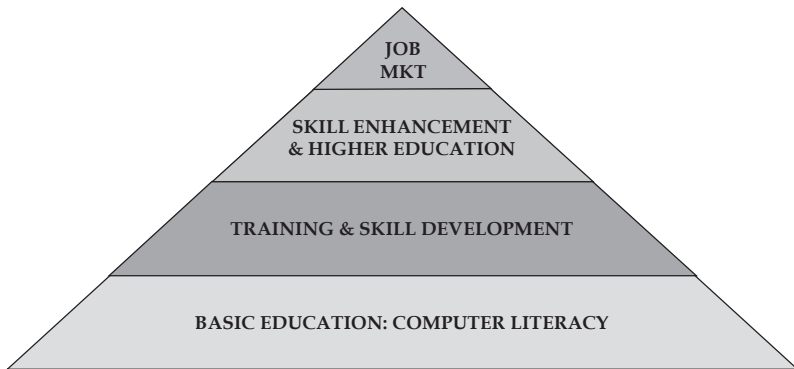
The Government's quick fix solution is the NREGA (National Rural Employment Guarantee Act) which has as its main objective:

“To enhance the livelihood of people in rural areas by guaranteeing 100 days of wage employment in a financial year, to a rural household whose members volunteer to do unskilled manual work”

The Government believes that this would raise a BPL family's income levels from \$1 to \$3 a day which would bring it out of abject poverty.

NREGA was launched in 200 districts 2006 in Phase I, extended to 130 additional districts in Phase II in 2007-08 and covered the remaining 285 districts in Phase III. This innovative scheme for inclusive development

aimed at tackling rural poverty through providing a minimal guaranteed income for unskilled and farm labour that would be harnessed for rural development especially in works related to soil and water conservation, drought and flood protection, rural road connectivity etc. 5 years later, the metrics are not promising: Thus far nearly Rs:40,000 crores have been spent with an additional Rs:45,000 crores allocated during the present fiscal year. No doubt poverty has been alleviated to a certain extent but it has created another problem, one of a large scale labour deficit across the farming and industrial sectors. NREGA is being viewed as a “dole out” and consequently both farm labour and construction labour is abstaining from work. It is a well known saying “Don’t feed a hungry man but rather, teach him how to fish so that he can learn to feed himself.” We need to innovate our well intended schemes for poverty alleviation better. NREGA needs to work with sectors that are dependent on unskilled and semi-skilled labour so that such financial outlays focus on skill development linked to income and economic sustainability. We need to have a strategy that pulls up people from the Bottom of the Pyramid through Education and skill development.



Our inclusive growth agenda must focus on equitable growth that allows people to address opportunities in a fair manner without disadvantaging the uneducated or unskilled or disabled. We therefore need to empower our impoverished and illiterate population through a program of education and training where NREGA links their subsistence allowance to their learning and skill development and even build in an incentive plan that rewards high performers. It is this that will build sustainable poverty alleviation.

The same can be said of agricultural sops that need to move away from loan waivers and free electricity to technology upgradation and land reforms. The loan waivers adopted by UPA I has neither enabled farmers to be debt free nor has it addressed the more serious

challenge that India faces in terms of abysmal agricultural productivity. What India's agricultural sector needs is the adoption of newer technologies and land reforms that enable economies of scale in farming. Biotechnology has certainly played a key role in greatly enhancing cotton production in India. Today 81% of cotton grown in India is Bt Cotton which covering 7.6 million hectares and has touched an annual production of 4.9 million tons which has catapulted India into a premier cotton producer second only to China which is also a beneficiary of Bt Cotton. Yield has increased over 30% and pesticide use on a comparative basis to non-GM cotton is significantly reduced. It must be highlighted that cotton accounts for almost 50% of \$660 million that is spent on pesticides.

Land reforms that enable economies of scale that allow for efficient contract farming that aim at increased productivity are urgently needed. States like Rajasthan have been pro-active and have announced a 30 year land leasing provision wherein farmers or land owners enjoy lease rentals as well as a share of profits without losing ownership of the lands. With the advent of a growing Retail sector, this model can lead to prosperous productivity.

HEALTHCARE

India's healthcare challenge begins with the urgent need to create a National Healthcare System that provides quality healthcare for its billion plus population. To this end, it is necessary to develop a comprehensive framework that incorporates an optimal balance between access and affordability. The challenge is formidable. India has enormous disease burden with sub-optimal infrastructure and resources to manage it. India is at the epicenter of Diabetes, Cancer, Heart Disease, Renal & Auto-immune diseases, TB, HIV and other infectious diseases. However there exists a huge deficit in resources across the value chain of health delivery as indicated by the following assessment:

- ◆ We are short of 2 million hospital beds
- ◆ We need an additional 200,000 Doctors and 1 million Nurses & Paramedics
- ◆ We need to expand our Primary care, Secondary care and Tertiary care centres by a factor of 10
- ◆ We need to treble our expenditure from 0.9% to 3% of GDP
- ◆ We need to enable and increase Health Insurance Coverage from 11% to 100% through a combination

of Government and Private Sector Insurance schemes.

Although these challenges sound insurmountable, there are many silver linings around these clouds of gloom:

India has several enabling factors that can effectively address its healthcare needs:

- ◆ The country is a world leader in generic drugs and vaccine production.
- ◆ It has a large network of medical and nursing colleges creating human capital for the sector.
- ◆ It has a countrywide infrastructure of hospitals, nursing homes and clinics delivering both basic and advanced healthcare.
- ◆ India has the technological expertise – in IT, biotechnology and telemedicine – which can be deployed innovatively and affordably to create a sustainable healthcare system.
- ◆ The country also has a fairly large insurance sector and successful micro-insurance schemes at the state level.

However, these resources have grown arbitrarily, in a sporadic, silo-ed fashion; with the result that good quality healthcare is tied to affluence. Although we have global scale in vaccine production, immunization does not cover many sections of our society for want of good administration. The resources are disjointed islands of leadership and efficiency, leading to a healthcare sector which has been unable to effectively meet the needs of the poor and middle classes. It is therefore essential that these resources are integrated through a holistic vision to ensure that healthcare is delivered to those who need it.

THE INNOVATIVE WAY FORWARD

The role of the Government of India as a healthcare provider has been fraught with waste and inefficiency. Government hospitals and Primary Health Centers have simply failed to deliver acceptable levels of healthcare. Most are under and ill-equipped, poorly staffed and financially unsustainable.

For starters, the Government simply should not take on the role of a healthcare provider. This is better done by the Private Sector, which already accounts for more than

75% of total healthcare delivery in India. Private firms are now thought to provide about 60% of all outpatient care in India and as much as 80% of all in-patient care. It is estimated that nearly 70% of hospital beds in the country are in the private sector.

The pertinent question in Private Sector healthcare is one of affordability. This can be answered if the Government were to play the role of an Insurance Provider and ensure the Private Sector provides both access and affordable healthcare to all strata of society through an effective public-private partnership (PPP) model.

Government as the Insurance Provider

Only 11% of the population has any form of health insurance coverage. Because so little insurance is available to the population of India, out-of-pocket payments for medical care is estimated to be approximately 95% of total health expenditures by households. Without insurance, the poor must resort to taking on debt or selling assets to meet the costs of hospital care. It is estimated that 20 million people in India fall below the poverty line each year because of indebtedness due to healthcare needs.

It is therefore imperative that more people are brought under health insurance, to alleviate poverty. Micro-health insurance is an innovative and affordable insurance model that can reimburse the private sector for basic patient care. Micro health Insurance Schemes such as The Arogyashri in Andhra Pradesh, and the Yashaswini in Karnataka, have met with fairly good success. The time has come to develop strong re-imbusement models based on insurance that can catalyze the mushrooming of primary, secondary and tertiary care centers all across the country.

Such a PPP model can work well only if it is transparent for all stakeholders: patients, hospitals, insurers, and the government. Smart card-based technology should be employed to facilitate transparency of transactions which the government can audit through an independent watchdog. The proposed Unique Identification card can double up as a health card to deliver services transparently.

Moreover, if such a card is made into a smart card, it could generate useful and powerful data that could help us draw up important health indicators that in turn can enable us design both preventative and prognostic

models for healthcare. This could lead to an array of enablers starting with medical interventions, informed budgeting and even differentiated research initiatives.

A hub-and-spoke approach where a tertiary care hospital provides the anchor for a number of secondary care nursing homes and primary care clinics is a tried and tested model in many parts of our country.

Only 25% of India's specialist physicians reside in semi-urban areas, and a mere 3% live in rural areas. As a result, rural areas, with a population approaching 700 million, continue to be deprived of proper healthcare facilities. Telemedicine can be a powerful way to connect primary and secondary care centers with a well equipped, multi-specialty tertiary care hospital. There is already a growing movement within India to establish a health grid that connects medical institutions and practitioners throughout the country. This needs to be formalized and encouraged.

Moreover, national networks for blood banks, transplants and medical imagery are essential, which can be ensured through technological interlinking.

More recently, the use of mobile phones in healthcare education, diagnosis and health delivery is gaining increasing acceptance in addressing the challenges posed by rural healthcare. One such program is something I am closely associated with in the early diagnosis of oral cancers which afflicts a large part of our rural population. Oral cancer is largely attributable to tobacco consumption. Healthcare workers have been trained to use mobile phones to collect information from individual households on tobacco consumption patterns. Basic examination coupled with photographs of mouth lesions that are transmitted via mobile phones to central hospital data sites can lead to early diagnosis of cancer. This leads to down staging of cancer and treatment options that provide better medical outcomes.

CONCLUSION

It is obvious that if India has to stride ahead, it must do so in a transformative way that includes every strata of its billion plus population. We must develop innovative models that bring convergence between Government policies and private sector investment for the greater good of the nation. For in our development lies economic sustainability and prosperity for all. It is this ethos that

Lakshmi Nizamuddin devoted herself to and I would like to end by saying that it is through this tireless effort that she touched and transformed many lives – Rahim, Rahil, Shoshana, Sidharth and Sonia, thank you for giving me the privilege of paying this tribute to Lakshmi, a true woman of substance.



Ms. Kiran Mazumdar-Shaw is the Chairperson and Managing Director of Biocon Limited. She is also the Chairperson of Biocon's two subsidiaries—Syngene and Clinigene. She has been named by Time magazine as one of the 100 most influential people in the world. Under her leadership, Biocon has grown to be the 7th largest Biotech employer in the world.

Ms. Shaw got her B.Sc., from Bangalore University, where she stood first in Zoology Honours. She did her post-graduate work from Melbourne University in Australia. She has received six honorary doctorates from Edinburgh, Glasgow, Dundee, Roorkee, Manipal and her alma mater in Australia.

Some of the awards Ms. Shaw has received are the following: Nikkei Asia Prize in 2009 for Regional Growth; Express Pharmaceutical Leadership Summit Award, also in 2009; Veuve Cliquot Initiative for Economic Development of Asia in 2007; Economic Times “Business Woman of the Year”, 2006; Padma Bhushan in 2005; Indian Chamber of Commerce “Lifetime Achievement Award” 2005 and Ernst and Young “Entrepreneur of the Year” Award for Healthcare and Life Sciences 2002.

Ms. Shaw is on several prestigious Committees such as: Since 1990, Member of the Advisory Council of Department of Biotechnology; since 2000, she chairs the Government of Karnataka Vision Group on Biotechnology; since 2004, she is on the Prime Minister's Council on Trade and Industry; she is a Founder Member of the Society of the “Institute for Stem Cell Biology and Regenerative Medicine”; she is on the US-India CEO Forum and she is a Member of the Innovation Council of the Government of India.

She established the Biocon Foundation in 2004 to conceptualize and implement developmental programmes for the social inclusion of economically weak communities in rural and urban areas. The areas of emphasis of the foundation are health, education and environment. In 2009 she established the Mazumdar Shaw Cancer Centre for Cancer Treatment and Research.