

Mudra Institute of Communications, Ahmedabad  
12<sup>th</sup> Convocation

31 March 2007, Ahmedabad

Team India for a New India

Convocation Address

By

Prof M S Swaminathan  
President, National Academy of Agricultural Sciences, New Delhi &  
Chairman, M S Swaminathan Research Foundation, Chennai

I am very happy to be here on a day when MICA is making available to our nation a large number of trained professionals in the field of communications management. The present era is known as Knowledge Age and the remarkable advances in information and communication technologies have given meaning and content to the concept of our planet being a global village. I congratulate all the scholars for the choice of MICA as their alma matter, since this institution provides an opportunity for International quality education in Communications Management.

On this occasion, I wish to refer to Mission 2007: Every Village a Knowledge Centre, a programme initiated by a National Alliance consisting of wide spectrum of partners. Mission 2007: Every Village a Knowledge Centre has now become a National Movement. The Department of Information Technology, Government of India is promoting the establishment of one lakh Common Service Centres (CSC) in order to provide the necessary infrastructure for e-governance. The National Commission on Farmers has recommended the establishment of Gyan Chaupals or Village Knowledge Centres, to begin with in two lakh forty thousand Panchayats / Local Bodies. While

connectivity can thus be assured, what is important is urgent attention to content creation and capacity building.

The overall National Strategy consists of the following three components

- Village Resource Centres with satellite connectivity established at the Block Level with the help of the Indian Space Research Organisation (ISRO)
- Village Knowledge Centres or Gyan Chaupals established by Government, Non-Government, Civil Society, and Academic Institutions
- Last Mile and Last Person connectivity through internet linked to Community Radio and/ or Cell Phone.

Seemingly impossible tasks can be achieved by mobilizing the power of partnership. This is the purpose of the National Alliance for Mission 2007, which provides a platform for working together by all those committed to the cause of Rural Knowledge Connectivity. The Government of India has included knowledge connectivity in the Bharat Nirman Programme or a New Deal for Rural India. The Government of India has also initiated many new missions such as the Rural Health Mission, Horticulture Mission and Financial Inclusion and is also committed to strengthening Panchayats and grassroot democratic institutions. It is only convergence and synergy among numerous ongoing programmes that could help us to leapfrog in achieving our goals surely, speedily and economically.

I would also like to take this opportunity to share with you some thoughts on the role of ICT in shaping our agricultural destiny.

### **Shaping our Agricultural Destiny**

Jawaharlal Nehru referred to India's tryst with destiny on the midnight of August 14-15, 1947 and urged that with the dawn of freedom we should work for a nation where every child, woman and man has opportunities for good health, nutrition, education and employment. Thanks to public policies and investments over the last 60 years as well as

the enormous progress made by the country in agricultural research, education and extension, impressive achievements have been made in improving agricultural productivity and production on the one hand, and human longevity, on the other. The contributions of public good research and policies will be clear from the following data:

- Foodgrain production increased from about 45 million tonnes in 1951-52 to over 200 million tonnes at the beginning of this century
- Productivity of major cereals increased from 700 kg per hectare in 1961-62 to over 1700 kgs per hectare now
- The net area under irrigation increased from about 21 million hectares in 1951-52 to over 60 million hectares now; gross irrigated area has also increased by over 300 percent. Groundwater irrigation has played the lead role in bringing more area under irrigation, thanks to technological advances
- Annual Milk production has gone up from about 20 million tonnes in 1950-51 to nearly 100 million tonnes this year (2007), thereby taking India to the first position in the world in milk production. This was achieved through management innovations spearheaded by the National Dairy Development Board, leading to mutually reinforcing linkages among milk production, processing and marketing.
- Both marine and inland fisheries have registered impressive progress : a major contribution to this progress has been made by scientific advances in the production of seed, feed, and induced breeding as well as crafts and gear
- Science and technology coupled with social engineering have helped to promote conservation, restoration and commercial forestry, and the regeneration of coastal mangrove wetlands

- Significant progress has been made in the development of affordable drugs for the control of malaria, tuberculosis, leprosy, cholera and the other diseases; small pox has been eradicated and leprosy is likely to be eradicated soon
- Many nutritional disorders like those arising from micronutrient deficiencies have now affordable remedies through a food-cum-fortification approach
- Rural drinking water supply has been made nearly universal through the design of simple water pumps and the application of remote sensing and hard rock drilling techniques
- Rural energy systems have gained enormously from scientific work related to the harnessing of biogas, biomass, solar and wind and other forms of renewable energy. Nuclear power generation based on indigenously developed technologies is making an important contribution to energy security. Bio-fuels are also receiving increasing attention.
- Great progress has been made both in space technologies and in the peaceful applications of atomic energy.
- Global leadership has been achieved in the field of Information and Communication Technologies (ICT) and it is now possible to bridge the urban-rural digital divide through **Gyan Chaupals or Village Knowledge Centres** under the Every Village a Knowledge Centre movement.

In spite of all this progress, an atmosphere of gloom and doom on the farm front is prevailing during this 60<sup>th</sup> anniversary year of our independence. The contribution of agriculture to GDP has gone down below 20 percent although nearly two thirds of our population still depend upon agriculture for their livelihood. Nearly 80 percent of the farm population operate small holdings, the average size of holding being 1.41 ha. Out of a total geographical area of 329 m ha, over 142 m ha constitute the net sown area. Nearly

63 percent of this area is rainfed. A recent study by the National Sample Survey Organization (NSSO) has revealed that nearly 40 percent of the farmers interviewed will like to quit farming if they have another option. How do we reverse this situation and bring back the pride in farmers and farming which was prevalent during the green revolution days of nineteen sixties and seventies?

The following three pronged strategy will help to revive our agricultural progress

- **Defending the Gains :** The fertile crescent area covering Punjab, Haryana and Western UP is currently the mainstay of our food security system. Unfortunately this region is facing serious ecological and economic problems. Ground water depletion is taking place at the rate of two to three feet every year and there is also salinization of soils. Economically, the cost – risk – return structure of farming is becoming unfavourable with the result that a majority of farmers are indebted.

In such areas it is important to promote conservation farming, minimum tillage and green agriculture. Conservation Farming involves efficient soil health and water management and adoption of the principles of precision farming. Green agriculture promotes the application of ecologically sound techniques like integrated pest management, integrated nutrient supply, crop - livestock integration, and the use of the most appropriate crop and variety. Green agriculture, unlike organic agriculture permits, the use of the minimum essential mineral fertilizers and chemical pesticides. It also permits the planting of genetically modified crops. We should introduce separate certification procedures for the products of organic and green agriculture.

The other important requirement is the conservation of prime farm land for agriculture. There has to be a land use strategy in every State based on the principles of ecology, economics, equity and employment generation. The available land should be classified by a professionally competent Land Use Advisory Service into the following categories:

- **Conservation areas** like forests, national parks, biosphere reserves, etc.,

- **Restoration areas** which require attention from the point of view of land care and soil health improvement
- **Sustainable intensification areas** which are ideal for crop and animal husbandry and fisheries and agro-forestry and for promoting an ever-green revolution leading to advances in productivity in perpetuity, without associated ecological harm.
- **Industrial and non-farm use areas** with low biological potential for agriculture and which are ideal for industries, housing, roads and special economic zones.

Once such a classification of the available land made in every State, it will be easy to promote the harmonious development of agriculture and industry. It should be borne in mind that sustainable agriculture is not only the backbone of the livelihood security system of the rural population, but also the main prerequisite for national sovereignty. In addition to water conflicts, we are now witnessing land wars. **This is just the tip of the iceberg since the worse is yet to follow keeping in mind the vast pressure of population on land and the jobless growth nature of modern industry. At present, only agriculture comprising crop and animal husbandry, marine and inland fisheries, agro-forestry and agro-processing, can promote job-led economic growth.** The sooner, a scientifically and politically acceptable system of land use is developed with the best available remote sensing data and professional expertise, the better will it be for avoiding conflicts and confrontation with farming communities. **The potential of land wars halting the economic progress of the country should not be ignored any longer.**

Land diversion for non-farm purposes is being done in some cases by invoking the provisions of the Land Acquisition Act of 1894. This Act is totally outdated and the following clause is particularly anti-farmer and pro-rich. “In determining the compensation, the court shall not take into consideration any increase to the value of the land acquired likely to accrue from the use to which it will be put when acquired.” There are some who would like to see large numbers of farmers with small holdings quitting farming by selling their land to business and industry. Land Markets which will provide a

fair deal to small farmers are being suggested for this purpose. Those who propose such an **exit** strategy for farmers should also suggest an **entry** strategy. Where will the farmers who sell their land go for their life long livelihood? **Exit and Entry strategies must be proposed together. The most urgent need in our country is the mandatory introduction of a livelihood impact statement in all development and commercial projects in the area of industry and retail trade.** The introduction of a few large transnational super markets will affect the livelihoods of millions of women and men engaged in small scale retailing. **Infact micro-retail enterprises provide the largest number of livelihood opportunities both in urban and rural areas. Job destruction and job creation must be concurrent events, if we are to avoid social chaos and unrest.**

- **Extending the Gains** - As mentioned earlier, we have a large reservoir of untapped production opportunities in the country. (Table - 1). Such an untapped yield reservoir is a major strength of our rural economy.

**Table 1**

<b>Comparative Crop Productivity (kg/hectare)</b>			
<b>Crop</b>	<b>USA</b>	<b>China</b>	<b>India</b>
Maize	8900	4900	2100
Paddy	7500	6000	3000
Soybeans	2250	1740	1050
Seed Cotton	2060	3500	750
Tomato	6250	2400	1430

We should immediately plan to introduce mutually reinforcing packages of technology, techno-infrastructure, training and trade in order to create the following two additional Fertile Crescents in the country:

- **Bihar – Eastern UP - West Bengal and Assam region** : This region has abundant water availability and good soils. What is important is to pay attention to the conservation – cultivation – consumption – commerce chain in its totality.

All the links in the chain should be attended to. As in the first fertile crescent area of Punjab, Haryana and Western UP, assured and remunerative marketing opportunities hold the key for stimulating farmers' interest in producing more.

- **Tamil Nadu – Karnataka – Andhra Pradesh and Orissa region** : Now that the Cauvery Water Tribunal has given its judgement on water allocation in the Cauvery basin, the time has come to concentrate on the efficient use of the available water. The Government of India is initiating this year, **“A More Income and Crop per Drop of Water”** movement all over the country. This region should take a very active part in this movement so that the maximum income can be generated through synergy among water, crop and variety, macro and micro nutrients, implements and market.

The above two additional fertile crescent areas will help the country not only ensure the stability of food supply for the Public Distribution System but also income and work security for millions of rural families.

- **Making New Gains** – The opportunity for making new gains is maximum in the 63 percent of agricultural area which is purely rainfed. Rainwater harvesting and aquifer recharge together with the cultivation of high value and low water requiring crops will help to improve the productivity of the major crops of dry farming areas such as pulses and oilseeds. These areas are waiting for the so-called “second green revolution”. **Attention to this area will also help to prevent inflationary pressures arising from the high cost of pulses, oilseeds, vegetables and fruits.** Attention to dry farming areas is the best insurance against inflation as well as hunger and poverty. These areas are also ideal for animal husbandry and horticulture. Yield and income enhancing technologies for dryland areas such as the cultivation of **hybrid arhar** (pigeon pea) are available. Pulses Villages can be established along with smallholder horticulture and dairy estates.

Thus, defending the gains involves safeguarding the heartland of the green revolution. Extending the gains to other States where irrigation water is not the major constrain will involve the immediate creation of two more fertile crescents in eastern and southern India. Making new gains will help to uplift the productivity and economy of rainfed areas. Unless we increase consumption, production will not go up. Hence, a universal PDS will confer the double benefit of stimulating farm production and erasing the unenviable reputation of being the home to the largest number of malnourished children, women and men in the world.

If agriculture goes wrong and poverty and hunger persist on a large scale, Naxalism which is already affecting 100 districts in the country will spread further. This view was articulated by the Roman Philosopher Seneca, 2000 years ago when he said “a hungry person listens neither to reason nor religion, nor is bent by any prayer”, Where hunger rules, peace cannot prevail. Unfortunately as a single nation, we have the world’s largest number of malnourished children, women and men. Modern industry promotes jobless growth while agriculture including crop and animal husbandry, fisheries, forestry, and agro-processing promotes job-led growth. This is another reason why agricultural renaissance should receive over riding priority.

The opportunities for agricultural transformation and revival are great. We should take advantage of the grass root democratic institutions like Panchayats and Gram Sabhas for achieving the necessary social mobilization. Panchayats can also help to organize group insurance in the case of crops, livestock and fisheries. We can then convert the concept of universal agricultural insurance into reality. **Universal insurance coupled with an universal Public Distribution System (PDS) will help to stimulate both production and consumption.** We need to pay concurrent attention to enhancing the consumption capacity of the economically underprivileged sections of the society. A Food Guarantee Act combining the features of employment guarantee and food for work programmes will help to fulfill the hope expressed by Mahatma Gandhi when he said at Naokhali in 1946 “To a people famishing and idle, the only acceptable form in which God can dare appear is work and promise of food as wages”.

## **Eliminating the Knowledge Deficit in Rural Areas**

In addition to the Small Farm Management Revolution, we need to improve our methodologies for bridging the growing gap between potential and actual yields, even with the technologies on the shelf. The following steps will help to eliminate the expanding know-how/ do how gap:

- Establish Farm Schools in the fields of outstanding Farmer-achievers, in order to promote farmer to farmer learning (Land to Land)
- Train one woman and one male member in every Panchayat as Farm Science Managers and familiarize them with issues like genetically modified crops and farmers' rights
- Restructure **Krishi Vigyan Kendras** as **Krishi aur Udyog Vigyan Kendras**, in order to end the prevailing mismatch between production and post-harvest technologies, on the one hand, and to promote concurrent attention to on-farm and non-farm livelihood opportunities, on the other
- Establish **Gyan Chaupals** or **Village Knowledge Centres** to promote quality trade and legal (with reference to Farmers' Rights) literacy and to provide dynamic information on meteorological and marketing factors
- Organise Lab to Land demonstrations in the areas of post-harvest technology, agro-processing and marketing
- Establish a State Farmers' Commission for continuous and structured interaction with farm families in technology and policy related issues.

The above are some of the challenges facing us today. For every problem, there may be several solutions. We should not take to easy solutions like importing food, pulses, and other commodities from outside, which may sound attractive in the short term but will prove to be disastrous in the long term. We should remember that in our country the majority of consumers are also farmers, since they constitute two thirds of the population. Therefore, the consumer – producer differentiation made in industrialized countries

where hardly 3 percent of the population are engaged in farming, is not valid under our conditions. Improved agricultural productivity is the only pathway available to us for achieving Jawaharlal Nehru's agenda for our Tryst with Destiny namely, "ending of hunger, poverty, illiteracy, ignorance, disease and inequality of opportunity". We can achieve inclusive economic growth only through accelerated agricultural progress.

The Jamsetji Tata National Virtual Academy for Rural Prosperity provides an opportunity for developing a grassroot level cadre of trained personnel for operating the VKCs and VRCs. The Fellows of the Academy constitute the new Team India for a New India, where rural and urban areas will develop and prosper together. The 'divides' will be replaced in such an India with unifying factors.

I congratulate you once again and wish you all much professional success and personal happiness. I request you to join the new Team India dedicated to ending the urban-rural digital and technological divides.