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CONTENTS

FOR A BETTER QUALITY OF LIFE 5
P. Chidambaram

OIL PRICES 11
S. C. Tripathi

OIL PRICES AND INDIAN ECONOMY 17
Ved Prakash Arora

HYDROGEN ENERGY AND TECHNOLOGY 21
Vijay Thakur

STRATEGIC PARTNERSHIP 27

A STABLE POLICY FOR CREDIT FLOWS 29
Dr Pyaralal Raghavan

TOOLS FOR RURAL TRANSFORMATION 31

RIGHTS OF THE DISABLED 32
Anant Kumar

PRANAYAM : THE NATURE CURE FOR ALL MALADIES 35
Rajendra Roy

NEW INITIATIVES IN CIVIL AVIATION SECTOR 38
Praful Patel

SECURITY ISSUES IN E-COMMERCE 40
Sunnykutty Thomas

E-GOVERNANCE IN INDIA 44
M. A. Lokhande

SILENT REVOLUTION AND AN AWAKENING 47
A. V. Singh

BOOK REVIEW 50

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About the issue

THE SURGE in global oil prices continues. Intermittent softening is proving temporary.

For the Indian economy, the main point is how to manage this global high prices burden in an equitable manner. The recent hike in the retail prices of petrol, diesel and cooking gas is likely to fuel inflation. Consumers also see it as a rude shock. The Prime Minister, Dr. Manmohan Singh described the latest revision as a "painful necessity'. He has said the decision to hike prices was the only way to protect the Government's budget and the profitability of public sector oil companies.

The Government does not have many alternatives. The last revision in the prices of transport fuels was done more than four months back and in case of cooking gas it was five months back. The trend in global oil prices continues to rise. In India petro-product prices could not be revised, the oil companies were facing the brunt. The line of thinking that oil companies should continue to share the cost is not tenable. These companies should be allowed to function on commercial lines.

Moderating tax policies by reduction seems to be one option which has been advocated by many. The taxes have already been reduced and as the Prime Minister said "we cannot afford to again tinker with the tax system'. At the time of the next Union Budget, the Government may re-examine the tax structure in the petroleum industry.

The present situation also rings out the message to focus on opportunities that the oil price hike is opening before us. The time has come to not only reduce dependence on oil but also give a new look at the plans for innovating and inventing alternate fuels – which could be the panacea for the spiralling oil prices. ❑

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For a Better Quality of Life

P. Chidambaram

The Government has restarted the move from administered to market-determined prices, while minimizing the adverse impact of rising petroleum product prices on overall inflation and on the citizens

THE PRESENT government at the Centre has, on the economic front, faced at least three challenges. The biggest challenge has been the threat to price stability and sturctural reform of the petroleum sector arising out of the unprecedented rise in global crude oil prices. Through a combination of macroeconomic management and carefully calibrated measures, the Government has restarted the move from administered to market-determined prices, while minimizing the adverse impact of rising petroleum product prices on overall inflation and on the citizens. Second, midway through the last six months, a delayed and deficient monsoon created concerns about growth prospects for the current year. The concerns have somewhat subsided with buoyant performance on the industrial and services front. Inspite of the deficient monsoon, there is no cause for worry about adequate supplies of essential commodities. Third, the Country had to cope with turbulence in the domestic stock markets. The market outlook has continued to remain positive.

Leaving aside the escalation in global energy prices, the international economic environment at present is relatively benign. There are clear signs of recovery in global economic activity. According to the latest projections by the International Monetary Fund (IMF), the world economy is expected to grow by 5 per cent in the year 2004.

A robust turnaround by the US economy, strong recovery signals in Japan, and high growth expectations in Emerging Asia on account of good performances by China and India, are seen as the major drivers behind the buoyant outlook for the global economy. It is, therefore, an opportune moment for India to expand business with the rest of the world by taking advantage of the existing policies that aim at facilitating global integration.

Following a robust growth rate of 8.2 per cent achieved in the previous fiscal (2003-04), the first quarter GDP estimates for the current year, released by the Central Statistical Organisation (CSO), indicate an overall GDP growth of 7.4 per cent. However, the deficient rainfall in some parts of the country and the unprecedented hardening of international crude prices, are likely to moderate output growth in the

Based on the speech of the Finance Minister Mr. P. Chidambaram at the Inauguration of the Economic Editors' Conference New Delhi, on 17th November, 2004.

remaining quasrters of the year. In its recently released Mid-Term Review of the Annual Policy Statement for the year 2004-05, the RBI has projected the economy to grow at a rate between 6.0-6.5 per cent for the current year. This is consistent with our analysis as well. Even at a relatively lower growth rate of 6 per cent plus for the current year, India will continue to be one of the fastest growing economies of the world. On the back of 8.2 per cent last year (which was on a low base of 4 per cent in the previous year) any growth rate of over 6 per cent should be considered satisfactory.

During the current year, rainfall was deficient in 13 out of 36 meteorological sub-divisions in the country. This is likely to affect the overall level of kharif output, compared to the previous year. However, prospects for the rabi crop continue to remain favourable, thereby allaying apprehensions regarding a much lower level of agricultural output for the year.

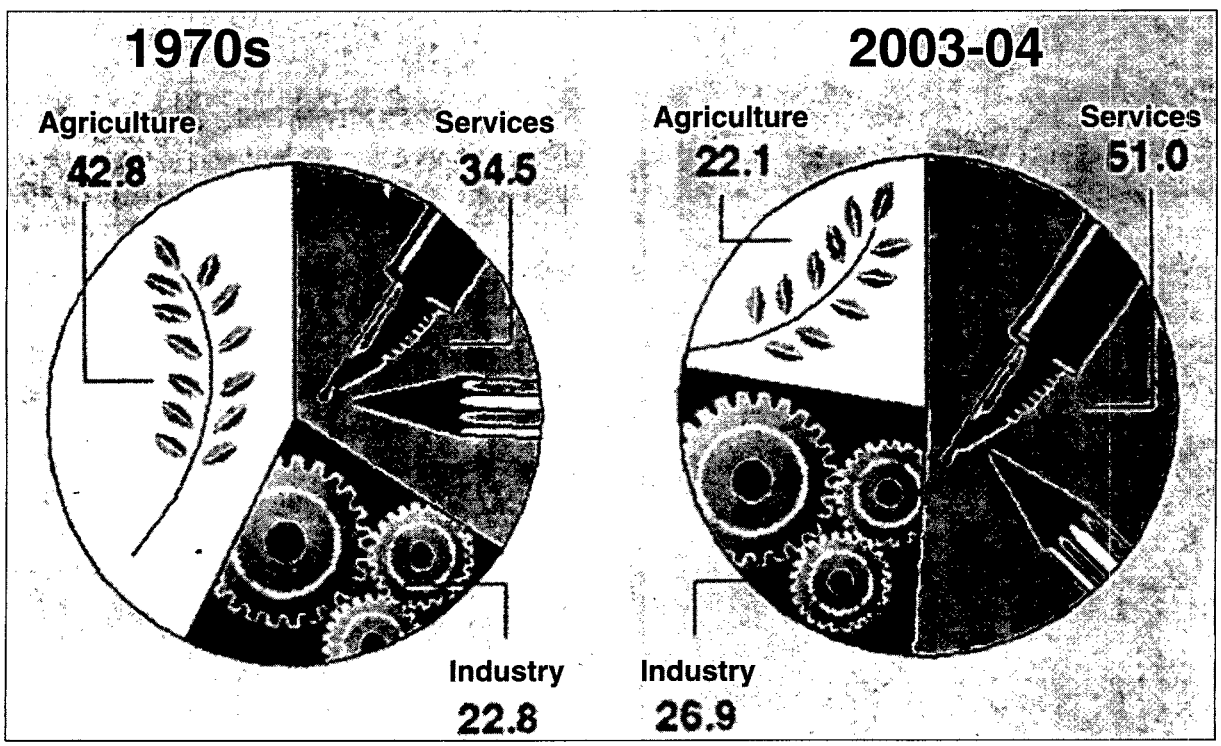
Containing prices has been a major policy challenge. Both fiscal and monetary measures, have been adopted for reigning in prices.

Domestic industrial activity continues to remain buoyant. The first quarter GDP estimates indicate a growth rate of 6.8 per cent for overall industrial output, which is almost one percentage point higher than the growth experienced in the corresponding quarter of the previous year. The Index of Industrial Production (IIP) reveals an aggregate industrial growth of 7.9 per cent for the first half of the year. The manufacturing sector has been particularly upbeat, and this is also reflected in the robust growth of non-POL imports during the year. Core infrastructure industries like electricity, petroleum, and coal, have shown impressive growth during the first half of the year.

The services sector, which accounts for more than half of the total national output, has maintained its satisfactory performance, by recording a growth rate of 9.5 per cent during the first quarter of the year. Services growth in the first quarter of the current year has been considerably higher than the 7.4 per cent growth recorded by the sector in

Contribution in GDP (percentage)

Changing Face of Indian Economy



Source: Economic Editor Conference

the corresponding quarter of the previous year.

India's external sector has grown from strength to strength during recent years. The country recorded a current account surplus of nearly US$2 billion during the first quarter of the current year. The current account surpluses achieved by the country in recent years reflect the growing strength of surpluses in the 'invisible account', which more than neutralized the deficits in the trade account. Merchandise exports are growing rapidly, but merchandise imports are growing even faster indicating the economy's growing absorptive capacity for imports of basic, intermediate and capital goods. Thus, during the first half of the current year, in US Dollar terms, while merchandise exports grew by 24.4 per cent, while non-oil imports grew by 25.8 per cent. The Indian export performance has been particularly commendable as it coincided with a depreciation of the US dollar vis-a-vis the rupee as against other major currencies.

According the latest estimates, our total foreign exchange reserves are over US$122 billion. Foreign Direct Investment (FDI) inflows during the first six months of the year have amounted to nearly US$2 billion, which is more than double the level achieved during the first half of 2003-04.

The momentum gathered by domestic industry has also been reflected in a sharp rise in non-food credit growth during the current year. Domestic capital markets have rallied back, which has also been reflected in a sharp rise in the volume of foreign institutional investment (FII) inflows during recent months. Efforts to widen and deepen the regulatory framework governing the Indian capital markets have continued during the year.

Containing prices has been a major policy challenge. Much of the recent rise in wholesale prices can be attributed to increase in the prices of petroleum and manufactured products. Both fiscal and monetary measures, in the form of lowering customs and excise rates on specific items like petroleum products and steel, and increasing the Cash Reserve Ratio (CRR) maintained by commercial banks, have been adopted for reigning in prices.

The process of economic reforms is irreversible. Our objective this time has been to make the reform process 'people oriented'. The National Common Minimum Programme (NCMP) drafted by the government is a unique policy document. It continues with reforms while trying to fulfill the core aspirations of the common people of our country.

Restoring the health of public finances is one of our topmost priorities. We have operationalized dthe Fiscal Responsibility and Budget Management (FRBM) Act by notifying the rules. The rules mandate us to reduce the revenue deficit and fiscal deficit by 0.5 per cent of GDP and 0.3 per cent of GDP, respectively, at the end of each financial year. The Union Budget (2004-05) aims to bring down the revenue and fiscal deficits, as a proportion of GDP, to 2.5 per cent and 4.4 per cent respectively. The encouraging growth in tax collections during the current year has made us cautiously optimistic about achieving the budgeted targets.

The process of economic reforms is irreversible. Economic reforms will become meaningless unless they create a sustained positive impact upon the standard and quality of life of the common people of our country. Accordingly, our objective this time has been to make the reform process 'people oriented'.

The National Common Minimum Programme (NCMP) drafted by the government is a unique policy document. It continues with reforms while trying to fulfill the core aspirations of the common people of our country.

Agriculture & Rural Development

A comprehensive policy on agricultural credit was announced on June 18, 2004. As on September, 30, 2004, Rs 53,591 crore were disbursed by commercial banks, regional rural banks (RRBs), and cooperative banks, to agriculture and allied activities with a view to double the credit flow to agriculture within three years.

The National Bank for Agriculture and Rural Development (NABARD) has formulated an Action Plan for promotion and bank linkage of 5.85 lakh Self Help Groups (SHGs) over the next three years, beginning from April 1, 2004. As on September 30, 2004, as against a target of 1.85 lakh for the current year, 86,377 SHGs have been credit-linked with a bank loan of Rs 110 crore

A Task Force has been set up for recommending an implementable action plan to revitalize the cooperative credit system in the country. The report of the Task Force is expected very soon.

Out of an aggregate number of 181 major /medium irrigation projects receiving Central Loan Assistance (CLA) under the Accelerated Irrigation Benefit Programme (AIBP), 37 projects have been identified for completion during 2004-05 and 46 projects during the remawining period of the Tenth Five Year Plan.

The coverage of the ongoing Antyodaya Anna Yojana (AAY) scheme has been expanded by adding another 50 lakh Below-Poverty-Line (BPL) families.

The Rural Infrastructure Development Fund (RIDF) has been revived with a corpus of Rs 8,000 crore for the year 2004-05, and schemes worth Rs 908 crore have already been sactioned.

A sum of Rs 1485.16 crore as against a budgeted amount of Rs 3148 crore has been expended for the Accelerated Rural Water Supply Programme (ARWSP).

Guidelines for the National Water Resources Development Scheme, aiming to repair, renovate, and restore all water bodies directly linked to agriculture, have been prepared and sent to all the states, requesting for project proposals for preparation of the pilot scheme. The pilot work is slated to begin on 1st January, 2005.

A Water Harvesting scheme for SC/ST farmers has been introduced with an outlay of Rs 200 crore and a central subsidy of Rs 100 crore. During the current year Rs 20 crore is expected to be disbursed. A detailed project report has been prepared for launching the National Horticulture Mission, which aims to double horticulture production from the current level of 150 million tonnes to 300 million tonnes by 2011-12. The report will soon be placed before the Cabinet for approval.

In order to make the country self reliant in oilseeds/edible oil production, a centrally sponsored "Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize" (ISOPOM) is being implemented in 14 major oilseed growing states of the country. The Government is implementing a Minimum Support Price Scheme for oilseeds for protecting the interests of the oilseeds growers and ensuring remunerative prices.

In addition to the Farm Income Insurance Scheme (FIIS), which was introduced during rabi 2003-04 in selected districts/states for wheat and paddy (rabi) crops, a Weather Insurance Scheme, called Varsh Vima Yojana, has been introduced on a pilot basis in selected districts of Andhra Pradesh, Karnataka, Rajasthan, and Uttar Pradesh, for Kharif 2004. For accelerating the growth in rural housing, the National Housing Bank (NHB) has reduced its refinance rates by 50 basis points.

Employment Generation

The coverage of the ongoing Antyodaya Anna Yojana (AAY) scheme has been expanded by adding another 50 lakh Below-Poverty-Line (BPL) families.

A National Employment Guarantee Act intending to provide legal guarantee for at least 100 days' annual employment for one able-bodied member per family among the poor is under consideration, and will soon be placed before the Cabinet for approval.

Infrastructure

An Inter-Institutional Group (IIG) of financial institutions comprising IDBI, IDFC, ICICI Bank, SBI, LIC, Bank of Baroda, and Punjab National Bank, has been formed for speedy implementation of infrastructure projects, with particular emphasis on airports, seaports and tourism.

Following announcements in the Union Budget (2004-05), two major initiatives aiming to enhance the public-private partnership in the port sector have been initiated. The Tuticorin Port Trust (TPT) has been awarded the contract for preparation of the Detailed Project Report (DPR) on the Sethusamudram Ship Canal Project. The report is expected to be finalized soon. Further, the contract for development of an International Container Transshipment Terminal (ICTT) at Vallarpadam in Kochi port on Build, Operate & Transfer (BOT) basis for a period of 30 years has been awarded to M/s Dubai Ports International.

A Water Harvesting scheme for SC/ST farmers has been introduced with an outlay of Rs 200 crore and a central subsidy of Rs 100 crore.

FDI cap in civil aviation has been

enhanced from 40 per cent to 49 per cent.

Education

Commercial banks have waived the collateral requirement for education loans upto Rs 7.5 lakh. Upto 31st August, 2004, 61,460 new student loans have been disbursed amounting to Rs 915.47 crore.

Health

The Universal Health Insurance Scheme (UHIS) has been redesigned specifically for benefiting those below the poverty line (BPL). The revised premia under the scheme are Rs 165, Rs 248, and Rs 330, respectively, for individuals, a family of five, and a family of seven, respectively. The scheme came into force from September 20, 2004.

Specific measures have been initiated for tackling the spread of AIDS and HIV in the country, in addition to the ongoing initiatives under the National Aids Control Programme. 215 sentinel sites have been established for tracking the progress of the HIV epidemic across the country. Focused activities aiming to promote safe sex practices have been undertaken. The electronic, print, and folk media is being actively used for building awareness regarding HIV/AIDS.

Senior Citizens

A new Senior Citizens Savings Scheme, offering an interest rate of 9 per cent, was introduced from August 2, 2004.

Small Scale Industry

Eighty-five items have been removed from the list of items reserved specifically for manufacture by small industries. The Securities Contracts (Regulation) Act, 1956, has been amended for enabling small and medium enterprises to raise resources from the market through the debt and equity routes.

What others said in the Conference

- Exports cross $ 40 billion in April-October, 2004-05—Ministry of Commerce
- 30 Airports to be upgraded—Ministry of Civil Aviation
- New drug pricing mechanism soon—Ministry of Chemicals and Fertilizers
- Seeds Act 1966 to be revised to attract more investment from private sector in the seed industry—Ministry of Agriculture.

Capital markets

The long-term capital gains from securities transactions have been exempted from income tax. The rate of short term capital gains tax has been reduced to a flat rate of 10 per cent. A securities transactions tax (STT) has been imposed for streamlining tax collections with respect to financial market transactions. The Securities Contracts (Regulation) Act, 1956, has been amended for providing a legal framework for transforming domestic stock exchanges from mutual organizational forms to demutualized forms.

Specific measures have been taken by the Securities and Exchange Board of India (SEBI) for protecting the interests of small investors by making the primary securities market more scientific, transparent and investor-centric.

The increase in investment ceiling for FIIs in debt funds from US$1 billion to US$1.75 billion has been notified.

The SEBI has reduced the turnaround time for processing of FII applications for registrations from 13 working days to 7 working days except in the case of banks and their subsidiaries.

In order to bring a satisfactory solution to the problem of registration fee payable by the brokers in the cash segments of the Exchanges, SEBI has on July, 15, 2004 launched the SEBI (Interest Liability Regularisation) Scheme, 2004.

Fiscal measures

The Empowered Committee of State Finance Ministers, resolved to introduce the Value Added Tax (VAT) at the state level from April 1, 2005. A Technical Expert Committee to work closely with state governments for smooth implementation of VAT has also been set up. A consensus has been reached on the issues of compensation in the case of revenue loss to the states.

The National Institute for Public Finance and Policy (NIPFP) has prepared a report on effective targeting of subsidies. The report is currently under examination before it is placed before Parliament.

The rate of interest on Central loans to states has been reduced from 10.5 per cent to 9 per cent with effect from April 1, 2004.

Apart from these measures, which have been already implemented, or initiated, there are several more in the pipeline, and the Central Government is acting in close coordination with states. These relate to policies pertaining to employment generation and poverty alleviation, agriculture, rural development, human development, infrastructure and public finance. In order to fulfill the aspirations of our people, there is need for greater decentralization of policy making and implementation in several areas. ❑

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Oil Prices

S. C. Tripathi

Oil markets seem to have entered a new phase of 'insecurity'. The risk premium is expected to decline as soon as security in Iraq improves and oil companies and governments reach a new level of cooperation on supply security

THE GROWTH over recent years in the consumption of commodities, driven by Chinese demand and the synchronized global recovery, has led to higher commodity prices across the board.

Volatile oil prices, in particular, have become headline news during the year 2004, due to certain basic factors like geo-political uncertainty, higher demand, tightness in global oil markets characterized by relatively low inventories and extremely low spare OPEC/Non-OPEC crude oil production capacity. Given the current tight global oil market, any disruption in oil supplies, whether real or perceived, can have an exaggerated impact on oil prices. These events can come in the form of natural disasters (e.g., hurricanes), infrastrure problems (e.g., refinery or pipeline outages), or supply disruptions overseas, which sometimes result from political situations. Some of the major drivers of volatile international prices in these areas have been:

1. Increased speculative activity in oil
2. Political instability in oil exporting countries like Iraq, Venezuela and Nigeria
3. Dispute regarding taxes between the Russian Government and Yukos oil company, the largest oil exporting company in Russia
4. Perceived threat to major oil installations of the world from terrorist organizations
5. Tight supply position in the OPEC countries
6. Sharp growth in demand from China, US and India
7. Disruptions in supplies due to Hurricane Ivan in the Gulf of Mexico

The details of the alarming increase in the international oil prices from the levels prevailing in March 2002 (when India dismantled the APM), and from April 2004 onwards are provided in the table. In October, the prices of WTI crude futures at the New York Mercantile Exchange (NYMEX) have already crossed $ 55 per barrel, the highest recorded in the history of the exchange.

The increase in the oil demand in the USA following a comparative economic recovery in some industries has affected the oil prices. The more extensive economic recovery in the USA, and its impact on the economy of many other countries of the world, will add to the demand for oil and if the supply side does not provide additional sources, in a considerable way, the prices will stay high or go even a little higher.

Increase in economic growth and industrialization in many countries of

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the world has a direct impact on the demand for oil. The new industries all over the world call for more energy.

The considerable economic growth of several Asian countries, especially India and China, are a major part of the price hike story. These two countries are home to 2.5 billion people. Their industries are thirsty for energy. With higher economic growth for 2004 in China, India & US, and non OPEC production unable to respond, the global supply/demand balance for crude oil has been tight. In recent years, the Chinese have converted many of their coal based industries into oil based ones and this has added to the increase in the demand for oil in China. China is now the second biggest oil importer in the world. The rapid expansion of the Chinese market is so considerable that even the American refineries prefer to sell their products in China, which has led partly to the increase of the gasoline and gas prices in the USA. Outsourcing, or the policy of sending the economic operations out of the original country, especially in the case of the USA, has helped the economic growth of India and China.

The situation of Iraq in general has special importance. The situation of Iraq is in fact, the source of many concerns for the oil market.

Terrorism is another area of concern. This affects the oil prices in two ways namely damage to the oil facilities and transportation routes resulting in disruptions and creation of instability in the concerned countries.

The Middle East is home to great sources of crude oil. Any turmoil in this area will directly affect the oil prices. Geopolitical uncertainties are sources of concern and a ready-made excuse for the rising oil prices.

Implications

Oil prices remain an important determinant of global economic performance. Overall, an oil-price increase leads to a transfer of income from importing to exporting countries through a shift in the terms of trade. The magnitude of the direct effect of a given price increase depends on the share of the cost of oil in national income, the degree of dependence on imported oil and the ability of end-users to reduce their consumption and switch away from oil. It also depends on the extent to which gas prices rise in response to an oil-price increase, the gas-intensity of the economy and the impact of higher prices on other forms of energy that compete with, or in the case of electricity, are generated from oil and gas. Naturally, the bigger the oil-price increase and the longer higher prices are sustained, the bigger the macro-economic impact. For net oil-exporting countries, a price increase directly increases real national income through higher export earnings, though part of this gain would be later offset by losses from lower demand for exports generally due to the economic recession suffered by importing countries.

"The Government took certain measures in favour of the vulnerable segments of the economy, by ensuring that the burden was shared by all the stakeholders namely the Government, the oil marketing companies and the consumer."

High crude prices means high energy prices across from coal to gas to power. Higher oil prices also lead to inflation, increased input costs, reduced non-oil demand and lower investment in net oil-importing countries. Tax revenues fall and the budget deficit increases, due to rigidities in government expenditure, which drives interest rates up.

Because of resistance to real declines in wages, an oil price increase typically leads to upward pressure on nominal wage levels. Wage pressures together with reduced demand lead to higher unemployment, at least in the short term. These effects are greater when the price increase is sudden and more pronounced and are magnified by the impact of higher prices on consumer and business confidence.

An oil-price increase also changes the balance of trade between countries and exchange rates. Net oil-importing countries normally experience a deterioration in their balance of payments, putting downward pressure on exchange rates. As a result, imports become more expensive and exports less valuable, leading to a drop in real national income.

The economic and energy-policy response to a combination of higher inflation, lower exchange rates and lower real output also affects the overall impact on the economy over the longer term. Government policy cannot eliminate the adverse impacts described above but it can minimize them. Similarly, inappropriate policies can worsen them. Overly contractionary monetary and fiscal policies to contain inflationary pressures could exacerbate the recessionary income and unemployment effects. On the other hand, expansionary monetary and fiscal policies may simply delay the fall in real income necessitated by the increase in oil prices, stoke up inflationary

pressures and worsen the impact of higher prices in the long run.

While the general mechanism by which oil prices affect economic performance is generally well understood, the precise dynamics and magnitude of these effects are uncertain. Quantitative estimates of the overall macroeconomic damage caused by past oil-price shocks and the gains from the 1986 price collapse to the economies of oil-importing countries vary substantially. This is partly due to differences in the models used to examine the issue. Nonetheless, the effects were certainly significant: economic growth fell sharply in most oil-importing countries in the two years following the price hikes of 1973/1974 and 1979/1980. Indeed, most of the major economic downturns in the United States, Europe and the Pacific since the 1970s have been preceded by sudden increases in the price of crude oil, although other factors were more important in some cases. Similarly, the boost to economic growth in oil-exporting countries provided by higher oil prices in the past has always been less than the loss of economic growth in importing countries, such that the net effect has always been negative. The growth of the world economy has always fallen sharply in the wake of each major run-up in oil prices, including that of 1999-2000. This is mainly because the propensity to consume by the net importing countries that lose from higher prices is generally higher than that of the exporting countries. Demand in the latter countries tends to rise only gradually in response to higher prices and export earnings, so that net global demand tends to fall in the short term.

As per the International Energy Agency (IEA), the adverse economic impact of higher oil prices on oil-importing developing countries is generally even more severe than for OECD countries. It is estimated that the loss of GDP averages 0.8% in Asia and 1.6% in very poor highly indebted countries in the year following a sustained $ 10 oil-price increase. Some countries could suffer much more: the Philippines could lose 1.6% of its GDP in the year following the price increase, and India 1%. China's GDP could drop 0.8%. The inflation rate in China and Thailand could increase by almost 1% in 2004 while in India it could increase by about 2.6%. The economies of oil-importing developing countries in Asia and Africa could suffer most from higher oil prices because their economies are more dependent on imported oil. In addition, energy-intensive manufacturing generally accounts for a larger share of their GDP and energy is used less efficiently. India, for example, uses more than two and half times as much oil as developed countries per unit of GDP, while the economies of China, Thailand and African countries are also very oil intensive. Rising oil intensity is reflected in the share of oil imports in total imports, which is increasing in many developing countries – notably in China and India. The vulnerability of oil-importing developing countries to higher oil prices is also exacerbated by their limited ability to switch quickly to alternative fuels, the prices of which may increase more slowly than those of oil products. And an increase in the oil-import bill also tends to destabilise the trade balance and drive up inflation more in developing countries.

Overly contractionary monetary and fiscal policies to contain inflationary pressures could exacerbate the recessionary income and unemployment effects. On the other hand, expansionary monetary and fiscal policies may simply delay the fall in real income, stoke up inflationary pressures and worsen the impact of higher prices in the long run.

Tackling Prices

While passing on the entire impact of the steep increase in the oil prices to the consumers would have resulted in steep increase in the domestic prices, the Government took certain measures in favour of vulnerable sections of society and vulnerable segments of the economy, by ensuring that the burden was shared by all the stakeholders namely the Government, the oil marketing companies (OMC's), and the consumer.

- Effective 16th June 2004, allowing moderate increase in prices of petrol by Rs 2 per litre, diesel by Re 1 per litre and LPG by Rs 20 per cylinder coupled with reductions in excise duties were implemented effective 16.6.2004. Simultaneously, excise duties on petrol were scaled down from 30% to 26%, on diesel from 14% to 11% and on LPG from 16% to 8%.
- Providing greater flexibility to OMC's to allow for autonomous adjustments in prices of petrol and diesel. Effective 1st August 2004, the revised methodology allowing oil companies limited freedom to revise the prices of petrol and diesel with-

Period	Crude Oil (Indian Basket)	Petrol	Diesel	Kerosene	LPG
	$/bbl				$/MT
March '02	23.31	26.43	23.27	23.65	194.00
April '04	32.37	42.79	36.89	38.98	292.40
May '04	36.09	48.41	40.74	43.77	319.20
June '04	34.23	44.04	38.79	40.88	348.20
July '04	36.35	45.12	42.75	45.58	327.00
August '04	40.53	50.62	47.98	50.03	341.00
September '04	39.15	48.20	50.44	53.04	383.00
October '04	43.38	53.68	53.79	58.29	401.00
Average	37.44	47.55	44.48	47.22	344.54
(Apr '04 - Oct '04)					

in a reasonable price band has been put in place.

- Effective 19th August 2004, further roll back excise duty on petrol from 26% to 23% and on diesel from 11% to 8% from 19.8.04 coupled with reduction in the customs duty on petrol and diesel from 20% to 15%. Similarly, excise duty on PDS kerosene was scaled down from 16% to 12% and customs duty on LPG and kerosene from 10% to 5%.
- Sharing of losses of the OMC's on domestic LPG and PDS kerosene with the upstream companies namely ONGC, OIL and GAIL to the extent of 1/3rd.

All these measures have targeted at keeping the inflation rate at around 7 per cent.

Future Scenario

World oil demand is growing at the fastest pace in 24 years. China's economic expansion has fuelled dramatic gains in fuel consumption, drawing in crude and refined products from all around the world. Chinese crude imports are up 40 per cent so far this year and show no sign of slowing despite government efforts to calm economic growth. Chinese demand is forecast to keep rising next year as car ownership surges and power generation needs grwo. The prospect of sustained growth has encouraged big-money speculative hedge funds to bet that high oil prices are here to stay. Indian consumption is growing fast too. And solid growth in the U.S. economy,

> **The vulnerability of oil-importing developing countries to higher oil prices is also exacerbated by their limited ability to switch quickly to alternative fuels, the prices of which may increase more slowly than those of oil products.**

which devours a quarter or all world oil, is driving competition between Asia and the United States for supplies.

Big oil reservoirs are becoming harder to find and more expensive to develop. Many of the oil provinces outside OPEC are mature, which means that finds are now smaller, need more costly technology to develop and fall faster from peak production. In OPEC, which holds around two-thirds of the world's oil reserves, many of the bigger nations either do not allow foreign investment in oil, or have unattractive investment and legal terms. This has slowed down production capacity growth in OPEC nations, meaning that most are already producing flat out to meet demand.

Oil companies have also been cautious on spending since the '97-'98 price crash slashed their share prices and triggered a spate of mergers. Many now see more value in buying back their own shares than ploughing money into developing oil supplies. They have focused on large-scale projects, which will give them good margins. Many new ventures are in remote areas, which demand expensive equipment and are more susceptible to delays. Forecasts of non-OPEC supply growth, especially when the rebound in Russian production is stripped out, have consistently been overstated. Non-OPEC supply growth outside Russia before the price crash averaged more than one million bpd. Since then it has been negligible. The increased cost of

finding and developing non-OPEC oil has fueled speculators convictions that oil markets are a good long-term bet.

Environmental regulations are pushing up the price of making fuel, forcing companies to build expensive new facilities and making it harder to ship supplies between regions. U.S. gasoline demand is up in part because of the growing numbers of low-mileage-per-gallon sports utility vehicles on America's highways. The United States accounts for about 45 per cent of world gasoline consumption. U.s. gasoline demand drives a growing requirement for high-quality light, low-sulphur crude. China is competing for those grades of oil to meet demand for transportation fueld, lifting the price premium for low sulfur crude. Most of OPEC's crude is heavy and contain high-sulphur. In the United States, individual states demand an array of different gasoline blends. This makes it harder to transport supplies between states and to import supplies from abroad. Environmental regulations have made it more expensive to build new refineries, and much harder to get the necessary permits.

Accordingly, all these factors are a pointer that a tight supply and demand balance is expected to continue and with the onset of winter, prices are expected to remain bullish because neither OPEC or non-OPEC country have the wherewithal to build capacity immediately nor is the fear price premium likely to subside in near future. Therefore, it can be reasonably concluded that the oil markets seem to have entered a new phase of 'insecurity'.

In the past it has been disruptions to the supply of oil that has driven prices upwards (most recently in Venezuela and Nigeria). Today, oil prices are driven by a booming global economy, led by America and China, which means inflationary pressure. Currently there is concern over the future of Iraq and the new government's ability to withstand almost daily attacks against eighter its security forces or oil infrastructure and export the volumes required to keep global growth from stalling and inflation down. However, the world is not running out of oil and the risk premium is expected to decline as soon as security in Iraq improves and oil companies and governments reach a new level of cooperation on supply security. Global economic growth in forecast to slow in 2005, which will reduce the pressure on the oil infrastructure and allow it to increase spare capacity. ❑

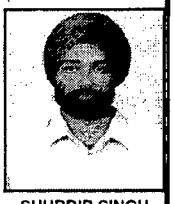
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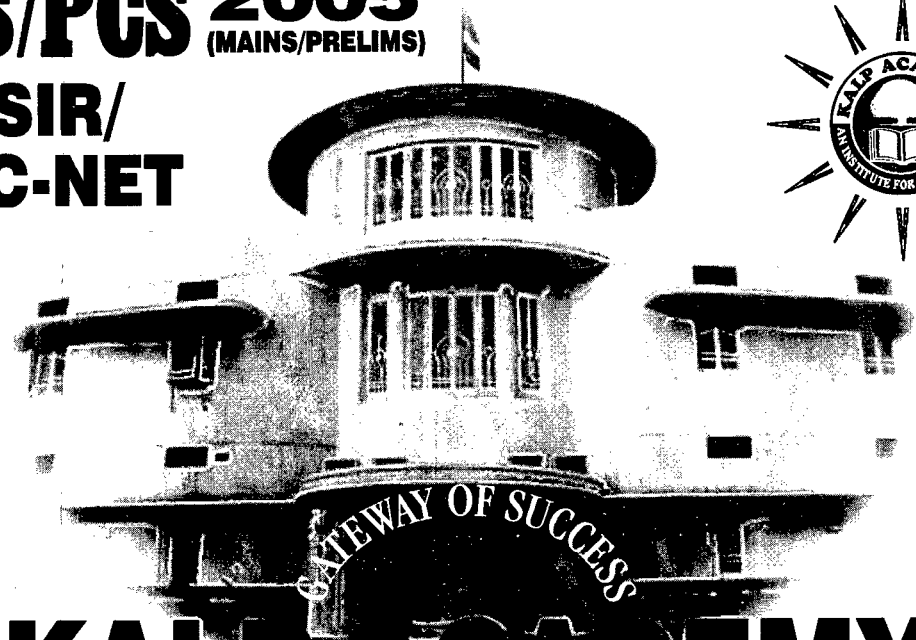
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Oil Prices and Indian Economy

Ved Prakash Arora

It goes to the credit of Indian economy that by now it has assumed so much of resilience and inherent strength that the recent spurt in oil prices have not delivered a real panicky dose

THE DEPENDENCE of any country on the import route to meet any of its basic requirements extracts a huge economic cost. In the Indian context, no example is more glaring than its poor and abysmally low production capacity of oil products. In the recent months, the oil prices in the international market has gone up through the roof, skyrocketting to the level of $56 per barrel in the last week of October. This has not only sent jitters to the financial markets all across the globe but has seriously affected some of the strongest economies in the world. The inflation levels have touched new highs and some economies are also facing the dampening prospect of slipping into a recessionary phase. Dollar prices have witnessed a significant devaluation while the price level of precious yellow metal has strengthened substantially. In fact, according to some projections, gold prices are likely to soon touch a level of $ 450/ounce. The major stock market indices in Asia like Nikkei and that of Hong Kong have slumped southwards and leading companies are reeling under the pressure of a drop in their revenue.

There is no gainsaying that the spiralling oil prices have come as a bolt from the blue for the economies especially of developing and underdeveloped countries. The cascading impact of rise in the prices of petrol, diesel, LPG cylinders and kerosene is well reflected in the sudden spurt in the cost of essential items like eateries, vegetables, fruits, pulses and also in the travelling fares through buses, trains and also in goods transportation. The impact of oil price rise, in fact, has been all pervasive — ranging from essential items to luxurious goods and has swept across all class barriers. Service class fraternity, housewives, students, entrepreneurs, traders, farmers, daily wage earners — nobody has been spared. But taking a cue from its predecessor, the present government too has resisted the necessity of price revision for populist reasons holding back the oil PSUs from making any change. But the moot question is : how long will these companies be subjected to incur huge losses. Especially in a scenario where administered price mechanism has been dismantled and the price revision in accordance with the rules of import parity structure could not be avoided for too long. It is

Mr Ved Prakash Arora is a freelance writer.

important to note here that the oil price in the international market has nearly doubled in last one year — from $30/ barrel to $50-$55/ barrel now.

Between 2002-03, the oil prices in India rose marginally but in the current year, it has registered an upswing every month though no mismatch in its demand and supply has been noticed in the domestic market. According to an estimate, our domestic oil demand went up in the range of 1.6 to 1.7 per cent annually in the last one decade or so. However, the demand in the current year has seen an unprecedented rise reaching to a figure of over four per cent. Our average demand escalation is projected at 4.1% which is far higher than 3.8% increase in the oil demands of Chinese and Mexican economies. Needless to say, this demand pattern has triggered an alarm bell since it is highest in the world. According to some oil experts, by 2025, the demand for oil in India and China alone will reach to a level which will cover one-third of the total oil output of the world. The Indian oil demand is all slated to double from its current level in next two decades and it is likely to equal the Chinese requirement by then.

Domestic Scene

Geographically, India is in a disadvantageous position with only 0.4% of world oil reserves whereas the countries of western Asia have a hefty share of 65% of the known reserves. India presently imports nearly 120 million tonnes of oil and gas annually and is one of the leading importers of energy resources. Alongwith Japan, Korea, European nations and Ghana, India is likely to remain a major buyer of oil in the future. In fact, the domestic oil production has seen a gradual decline since 1990's. In 1991, India needed to import 30% of its oil requirement which has now shot up to 70% due to the gradually widening mismatch between growing demand and shrinking domestic supply. On hindsight, around 1991 which is best remembered for Gulf war, India was importing a little less than one-third of its oil needs.

Though the oil output from the Bombay High reserves had reached to its peak, the domestic demand for the petroleum products didn't far exceed the domestic production of the crude. And this provided India the cushion to protect itself from the vagaries of oil price fluctuation in the international market. However, in the next 12 years, there has been a sea change in the scenario with the increasing domestic demand making India increasingly dependent on the import of crude.

This situation, however, does not totally reflect the precise scenario in the global market. According to the Indonesian president of OPEC, Mr. Pornomo Usgiyantoro, presently the production of crude oil on a daily basis is over two million barrels more than the global demand. Therefore, the question of shortfall in supply does not exist at all. Yet if the oil price is in a high price band of $50-55/ barrel, much of this owes to about $10-15 dollar of premium payment by the buyer for the political risk coverage. This is directly related to the geographical and political issues and has no co-relation with the real economics of the oil trade. According to the director of OPEC's research wing Dr. Adnan Shihab Aldin, if there is not a mismatch between demand and supply, there would be no impact on the pricing pattern.

However, much of the dampener effect is triggered by the situations like political uncertainty and some volatile international developments. The incident of any political upheaval in any oil producing country could well affect the supply line. At times, the price rise is also triggered by some market related factors.

Role of OPEC

OPEC members are of the opinion that they are not responsible for the present increase in oil prices. But all observers do not agree with this viewpoint. Our own Finance Minister, P Chidambaram has blamed OPEC for the present troubles. However, the global oil price volatility is also the function of several other direct and indirect factors. Today, the world has shrunk thanks to the telecom revolution and any piece of information pertaining to any untoward development anywhere like cyclone, earthquake, political upheaval, civil war, etc. could well cause a spurt in the oil prices.

There is no dearth of examples to support this argument. In 1979, during Iranian revolution, the price of crude had jumped up to $ 80/barrel. The political uncertainty in Venezuala had resulted in decline in overall production. Similarly, incidents like labour strike in Nigeria, cyclone in Mexico, bomb blasts in Spain, etc. in the past have affected the pricing pattern of oil products. Oil prices have also been determined by the factors like chilly climatic conditions in the Northern Hemisphere which have affected the supply to America where the demand increases substantially in winter. The primary reason being the rapid spurt in tourist inflow. In fact, in countries like Japan and Germany, every year the demand for oil during winter goes up by a big margin. The shortfall in supply to the European and other countries has also contributed to the price rise. Apart from mismatch between the demand and supply, unwarranted speculation also results in burden to the oil consumers.

While the oil is on a boil in the international market, the macro-economic scenario in the country is not all that hunky-dory. The delay in monsoon this year has ensured that the targetted three per cent of growth rate for the agriculture sector would not be met. The high oil prices coupled with low agricultural growth have raised the apprehension of low GDP growth rate in the range of 6-6.5% this year as against the previous estimate of 6.5-7%. Finance Minister P Chidambaram has already stated that an increase of $5/ barrel in the oil price brings down the GDP growth rate by 0.5% and enhances inflation rate by 1.5%.

Though there is no shortfall of oil supply in the international market, vested interests often indulge in the game of hefty price fluctuations for their benefit. India has so far successfully tackled the pressures imposed by high oil prices, but this could not remain permanently bearable. Its negative impact on our inflationary and national growth scenario is now a certainty. According to a RBI estimate, one dollar increase in the crude price enhances our oil import bill by $600 million or Rs 2800 crore. Our oil companies like IOC, HPCL, BPCL have incurred a loss of nearly Rs 2100 crore between April-September this year due to volatile oil prices. The government finances is also reeling under the subsidy burden of Rs 158/ cylinder and Rs 11/litre respectively on LPG and Kerosene prices. On account of these, the oil companies have been affected by a loss of Rs 4900 crore. To offset some of these losses, oil companies are now demanding increase in the price of petrol by Rs 1.60/litre and that of diesel by Rs 0.60/litre.

Strong Economy

It goes to the credit of Indian economy that by now it has assumed so much of resilience and inherent strength that the recent spurt in oil prices have not delivered a real panicky dose. The export growth has been steady though a larger import has created some imbalance in the external trade scale. The changes in the monetary policy has brought down the inflation rate though at 7%, it is still far higher than the previous fiscal's level of 4-5%. In fact, in the first two weeks of September, the inflation rate had touched 8.33% — highest in past four years. To curb the inflationary pressure, the government had immediately decreased the custom and excise rates on petro-products and steel. Even the RBI had enhanced the cash reserve ratio in order to curb the supply of money in the market — a surefire move to check inflation.

In order to keep petroleum prices to a permissible and acceptable limit and save the consumers from additional burden, the government had also announced a cut in the sales and excise taxes on diesel, petrol, kerosene and LPG to the tune of 3-5% on 18th August. The United Progressive Alliance has opted to put the burden on its own exchequer and on the oil companies. The domestic oil industry has even maintained that due to slashing of duties, the prices of petrol and diesel have come down by Rs 1/litre.

Oil Fund

The UPA government has also set afoot some other initiatives to deal with the challenge of oil price rise. A parliamentary committee has recommended setting up of a price stabilisation fund out of the collections through taxes on oil products. According to an estimate, over Rs 5,000 crore has annually accrued through oil taxation in the past 12 years. If the interest earned on it is taken into consideration, the cumulative amount touches a whopping Rs 1,00,000 crore. This fund could be easily used to offset the losses to the national exchequer because of reduction in custom and excise duties on petroleum products. This could also be used to sustain the subsidy on LPG and kerosene. Instead of levying ad valorem duty on petroleum products, this fund could also be utilised in creating a fixed duty structure because the present taxation pattern results in greater burden on the oil companies in their co-relation with global oil prices. The parliamentary committee has also advised the creation of a petroleum regulatory authority to protect the interests of the consumers. Some left-wing leaders have given the suggestion of making changes in the duty structure and have demanded the complete elimination of excise duty on subsidised oil products and a further reduction of 5% in their import duty. But the Asia-Pacific Director of IMF David Burton believes that such moves will be detrimental for the country's economy in the long run.

The unprecedented rise in the oil prices has made it imperative for the government to make suitable adjustments by hiking the price in the domestic market. This will save the oil companies from incurring further losses and the government from losing precious revenue. The reduction in oil duties need to be properly supplemented with the moves to ensure a more efficient use of oil resources through innovative technological means. In this context, Delhi offers an example worth emulating where the use of CNG has not only brought down pollution level but has also resulted in the decline in the usage of conventional oil products. Equally important is that the co-relation between gas and crude prices should be done away in due course of time. Here, it is also important to note that for crude oil imports, OPEC should not be seen as the sole source since presently these countries are contributing 30% of the global oil output. The oil producing countries

other than OPEC also play a crucial role in determining the oil pricing structure. Countries like Russia have emerged as major oil producers outside OPEC. In fact, OPEC knows fully well that alternative destinations are fast coming up for oil exports but it still indulges in making adjustments in the level of oil production to suit its designs. According to an estimate by International Energy Agency, the global demand for crude oil is expected to go up by one million barrel per day this year. The oil producers outside OPEC are likely to see an increase in their per day exports by a margin of 1.4 million barrel. Out of this, 0.6 million barrel will be coming from Russia and Kazakhistan and the remaining 0.4 million barrel will be contributed by the African nations. Going by this equation, in the event of rise of exports of non-OPEC contributors, OPEC may resort to the strategy of slashing its production level to ensure that prices do not fall in the international market.

Effective Strategy

If India has to chalk out a long term strategy to meet its energy requirements, it must look at the alternative sources like wind and solar energy which are perennial in nature. In Brazil, the planes known as Emanema which are used for spraying pesticides are run on a fuel which is mixed with ethanol. This fuel is not only eco-friendly but also enhances the efficiency of the engines. In some countries, ethanol-mixed petrol or diesel are also used to run cars and other vehicles. The most interesting fact about ethanol is that it can be easily churned out of such mundane agricultural products like sugarcane, maize, barley, potato, sunflower, etc. The only pre-requisite for the production of ethanol is vast stretch of arable land and there is no dearth of it in our country. Sugarcane is considered to be the best source of carbohydrates and it is probably used extensively to produce ethanol in Brazil. India has already got into a technological tie-up with Brazil to promote the production of ethanol and the process of mixing conventional fuel with ethanol has already begun in the country in a selective way. Presently, the ethanol-mixed fuel is being used in eight states which are major producers of sugarcane. The mixed new fuel is likely to be made available in other parts of the country soon. In Brazil, 20% of cars are running on the mixed fuel and considering its growing popularity, automobile manufacturers like GM, Fiat, Ford, etc. have started offering their customers the option of either conventional fuel products or ones which are compatible to ethanol mixed fuel. It is widely believed that if the use of ethanol picks up momentum in India as a mixing ingredient with petrol and diesel, our consumption of convention fuel will drop significantly and the country will manage to save precious foreign exchange. The need to promote alternative sources of energy becomes more pressing if one considers the fact that present global oil reserves are estimated to last for another 40 years only. According to an estimate, the total volume of wasteland in the country presently is to the tune of 18 crore and 60 lakh hectares. Even if a fraction of this, say one crore hectare, is utilised in a dedicated manner for the production of ethanol, country's energy requirement scenario will get a major boost from what it is today. In a similar manner, we could also look at the possibility of mixing diesel with new constituents. We already have some effective examples from global arena like Spain, Malaysia and France where olive, palm and rapeseed oils are respectively mixed with diesel. To promote this kind of mixed diesel, what we only need is the extensive sowing of oil seeds and subsequently our overall diesel consumption may also go down. This may also create new employment avenues in the our economy. Though our present per capita consumption of oil products is abysmally low vis-à-vis countries like the US, EU bloc, China and Japan, it is likely to substantially shoot up in the years to come. In the initial phase, the use of bio-fuel may appear to be expensive but with gradual increase in their production, their prices will definitely come down. However, to accomplish this task, we will also need an extensive network of bio-fuel refineries within the country.

Automobile manufacturers like GM, Fiat, Ford, etc. have started offering their customers the option of either conventional fuel products or ones which are compatible to ethanol mixed fuel.

To ensure more efficient use of our conventional fuel options, a collective consciousness is also required to promote their pragmatic use. We could have a new set of measures like rationing of petrol distribution, cutting down the unwarranted use of official vehicles, and taking the old vehicles out of our roads, etc. Or perhaps we could also draw inspiration from the example set by Thailand's Prime Minister who rides a bicycle to travel between his residence and office thus promoting the cause of relying less on fuel driven vehicles. No doubt, this is an extreme measure but it could do wonders to the much needed objective of judiciously using or preserving our precious energy resources. ❑

Hydrogen Energy and Technology

Vijay Thakur

The next generation belongs to hydrogen. The day is not far when hydrogen would fuel most of our energy demands whether it is cooking, generating electricity or running a car

IF WE see future from the eyes of Dr T Nejat Vaziroglu, Director of UNIDO International Centre of Hydrogen Energy and Technology, there would be no pollution, no electric wire on streets, no cooking gas cylinders, no petrol filling stations-just a hydrogen supplying underground pipe would replace everything. Hydrogen would light our house, fill our car, and cook our meal.

"The hydrogen pipe would be connected to every house or every commercial building. The pipe would be attached to a cooking stove, one point would fill your car, and another point attached to a fuel cell that would generate electricity for household electric items," Mr. Vizorogly, who has worked in Hydrogen sector for over four decades, said while he was addressing a selected gathering of Ministry of Non Renewable Energy Resources (MNES) visualising the future of hydrogen sector in next fifty years.

All this appears a bit exaggeration. But Mr. Viziroglu, who was nominated for Nobel Prize last year for his contribution in the hydrogen sector, has already selected three towns, where he would implement his dream.

The three towns–in China, Libya and Argentina–would meet all its energy needs through hydrogen. These projects are unique in itself, as it would show a path for the usage of hydrogen energy. Mr Viziroglu has also offered to fund a similar project in India as well. Indian government is now preparing a proposal to submit in UNIDO, which if all goes well would be sanctioned by next year.

Whatever be the outcome of these three projects, there is no denying the fact that next generation belongs to hydrogen and the day is not far when hydrogen would fuel most of our energy demands whether it is cooking, or generating electricity, or running a car.

The recent surge in the International crude oil price and increasing green house gases has further diverted attention of the international energy community to look for clean and green fuel. And all their search ends at hydrogen, which is high in energy content, and has great potential to replace liquid fossil fuels. And more importantly it is pollution free, when hydrogen is burnt it produces water as a by-product. It has many other advantages. It is found in abundance in nature, can be produced through several routes mainly through biological conversion of various organic effluents,

Mr Vijay Thakur is Special Representative, The Statesman.

through electrolysis of water, and through thermal decomposition of water.

But despite all these plus points, hydrogen sector could not pick up because of many disadvantages. One it is very light and hard to store in cylinder, two it is highly inflammable, and three requires very costly technology for conversion or storages.

Presently, hydrogen is almost four to six times costlier than the fossil fuels, and hydrogen vehicles cost six to 10 times more than a normal vehicle. "But these all are teething problems, and would become economical when petrol price would reach its peak in next few decades and hydrogen cars are produced in great numbers," according to sources in MNES.

Many auto manufacturing giants, Ford, GM Motors, Honda, Daimler-Chrysler have already developed their prototype hydrogen car, and their commercial version would start hitting market by middle of next year. Though in the beginning it would be very costly, scientists believe that by 2015-20, when world demand for oil will outstrip production, hydrogen cars will come in the reach of a common car user.

The first hydrogen-revolution will take place in Nordic countries namely Iceland, Denmark, Norway, Sweden– where production of hydrogen is economical because of cheap hydral and geothermal energy.

Infact, Iceland Government has already chalked out a plan to make Iceland free from the use of fossil fuels by the year 2030. Rather scientists there are projecting Iceland as 'the Kuwait of the North'.

Worldover more than 200 hydrogen fuelled vehicles are already running on experimental basis. In India also a Benaras Hindu University Professor, has developed hydrogen fuelled motorcycles, which he has been running for the past one decade and improving its capacity and performance every year to make it commercially viable.

In Indian context, hydrogen revolution is still a distant dream as it cannot afford costly fuel-cell technology. However, government is concentrating on 'economic hydrogenization' of energy sector. Recently, Planning Commission has accepted a proposal of giving Rs 250 crore budgetary support for three years and another non-lapsable corpus fund of Rs 200 crore for R&D activities in the hydrogen sector. India would first start with hydrogen blending and then wait and watch which technology suits Indian economy.

What India is looking in the next few years is a revolution in the bio-diesel sector. Bio-diesel is the name of a variety of ester based oxygenated fuel derived from biological sources.

From next year Delhi road will see hydrogen blended CNG vehicles. To begin with, government will run about a dozen commercial vehicles in which hydrogen will be blended with CNG in 1:9 ratio. This would be first such project on hydrogen blending in the country, where a dozen commercial vehicles will be run on hydrogen-blend CNG fuel. The total cost of installing Hydrogen-CNG fuel station and production of Hydrogen gas would be about Rs 20 crore.

After its success, hydrogen-blending would be extended to other commercial CNG-vehicles. This blending, does not require any engine modification, and also would not financially pinch the vehicle owners that much. Rather it would reduce Nox gases and carbon emission considerably.

What India is looking in the next few years is a revolution in the bio-diesel sector. Bio-diesel is the name of a variety of ester based oxygenated fuel derived from biological sources. It can be used in existing diesel engines either with minor modification or with no modification. It is also a cleaner fuel, 20% blending with petroluem diesel can reduce particulate matter by 31%, CO by 20% and total hydrocarban by 47%, claimed IOC (Indian Oil Corporation), which has been working on bio-diesel blending.

There are many hardy trees in India whose oil after refining can be used as bio-diesel. One such is Jatropha, whose cultivation could be economically viable for bio-diesel. Oil extracted from Jatropha seeds can replace petroleum diesel after slight modification.

For the promotion of bio-fuels, government is going to launch a 'National mission on bio-diesel' that would outline a roadmap and propose a time table and organisational framework for cultivation, production and conversion of Jatropha oil.

It is planning to plant Jatropha on 11 million hectares of wasteland so as bio-diesel could replace petroleum diesel to some extent and save foreign exchange. "Production of bio-diesel is more important for India because it has potential of generating 11 million jobs in rural areas," said the Deputy Chairman of Planning Commission, Mr. Montek Singh Ahluwalia, while addressing a meeting on alternate fuels.

The Planning Commission has also set up a committee headed by Mr Kirit Parikh, under the tenth Plan to draft the future energy policy report which will be tabled in January next year. Bio-diesel is already being used in buses in Mumbai as well as Rewari in Haryana on trial basis. CSIR and Daimler Chrysler have jointly sponsored a Jatropha plantation project and undertaken a successful, 5,000 km trial run of a Mercedes car using bio-diesel.

Government would also set up a processing plant of 80,000 MT per annum of Jatropha oil and build up infrastructure for storage, blending and distribution of these bio-fuels.

Economically, bio-diesel is presently costing slightly on the higher side. While in USA 20% bio-diesel blending cost 30-40 cents per gallon more, in India 20% blending would cost 25% more than normal diesel.

"However, these calculations are based on present price of vegetable oil, once Jatropha oil comes into market, the price difference would not be much," said the Director of Indian Oil Corporation (Research and Development), Mr. N.R. Raje, who in close association with Planning Commission, MNES and Indian Railways are working on bio-diesel project in Gujarat.

Alcohols

Another area where India can do well is in Alcohol blending with petrol to cut its oil import. Ethyl alcohol is a by product in sugar industry. Presently India has an installed capacity for production of 2824 million litres of alcohol in a year whereas total requirement of alcohol for all purposes is 1200 million litres. The remaining is used for five percent alcohol blending in nine states, which will soon spread to all the states. And later this five percent blending would be increased to 10% blending. This is not only economically viable, but can also boost sugar industry.

In alcohol blending, Brazil is a success story, Brazil government stressed on alcohol production after 1970 oil crisis. It started alcohol blending with 10% and increased it to 20% as it does not require any major engine modification. Auto companies even manufactured vehicles running on 100% alcohols, but later when oil prices came down in the international market, the manufacturing of 100% alcohol run cars were stopped.

Coal Beded Methane (CBM), which is in abundance in India and is still unexploited and can prove to be another source of energy for auto sector. Petroleum and Natural Gas Ministry has already successfully initiated the process of commercial exploitation of CBM. International bids for CBM-I and CBM-II for exploration of CBM has already been given.

Another fossil fuel–methane hydrate, which is lying deep under the ocean floot–is also coming up as a future energy source. Though it attracted scientists attention in 1970, it was not taken seriously that time because it was not commercially viable. Now a few countries are taking it up seriously to make it a future source of energy.

According to a rough estimate done by the Japan government, there could be about seven trillion cubic meters (TCM) of methane hydrate under the sea around Japan alone that would meet its energy requirement for next 100 year.

Japan government in association with international agencies are working out plans for possible economical extraction methods of methane hydrate which is lying under the sea bed at 800 to 3,000 meters.

From the waste

Besides this there are several innovative techniques devised by scientists which can convert waste into fuels. A professor in Indore, invented a method to produce petrol using waste polythene bags. According to a report prepared by him, the polythene waste in India can produce 10 lakh litres of petrol every day. He in association with Indian oil is planning to set up a 'petrol producing' unit in Indore and later spread such projects in other parts of the country.

Government of Japan has also started a similar project of converting used cooking oil into bio-diesel. In Japan, cooks discard about four lakh cooking oil every year, with normally polluted the environment. Now the same oil is being processed and converted into VDF (vegetable diesel fuel).

And the oil collection method is unique, if you send 10 bottles of used oil, you will be given ownership of 3.3 square meters of forest in Tadami-Cho Fukushima Prefecture. This system recycles waste cooking oil, recruits forest owners, protects woodland and cuts down on carbon dioxide emissions. ❑

Stop Press

The government has reduced petrol prices by up to Rs 1.26 per litre. The decline in global crude oil prices in the last fortnight has enabled the Centre to take the decision. Diesel and LPG (cooking gas) prices all remain unchanged.

The Centre has earlier increased the price of petrol by Rs 2.19 a litre, that of diesel by Rs 2.12 a litre and cooking gas (LPG) by Rs 20 a cylinder. The price of kerosene remain unchanged.

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In The News

1 A New Beginning for Jammu & Kashmir

The Prime Minister Dr Manmohan Singh during his two day visit to Jammu & Kashmir on 18th November announced, a revival plan of Rs 24,000 crore for the State. The components of the plan include:

(i) creating 24,000 new jobs

(ii) electrification of all villages by 2007

(iii) substantial investment in tourism and infrastructure

(iv) rural health schemes to be upgraded and intensified

2 An independent oil regulatory authority will be setup soon and the requisite legislation is expected in the winter session of Parliament. This was announced by the Prime Minister Dr Manmohan Singh during his interaction with European investors in the Hague.

3 India has achieved telephone density of 8.03 per cent in September 2004. It was 7 per cent in March 2004.

4 The Government has given a series of incentives for decentralized procurement of foodgrains and Rs 200 crore commission for fair price shops to strengthen the Targetted Public Distribution System.

5 Ministry of Finance has lowered the age limit for investment in the Senior Citizens Savings Scheme to 55 years.

6 To target domestic and foreign investment, the Government has decided to set up an Investment Commission.

7 The Government has decided to increase FDI limit in domestic airline companies to 49 per cent from the current 40 per cent.

8 India is going to create a new world record by crossing the 90 million ton mark in milk production in 2005.

9 The Union Government has raised minimum support prices for a number of crops for 2004-05. Among others, the MSP for wheat has been fixed at Rs 640 a quintal and for barley it is Rs 540 a quintal.

10 The Cabinet Committee on Economic Affairs (CCEA) has decided to set up a seven-member Board for Reconstruction of Public Sector Enterprises.

11 Noted film-maker Shyam Benegal has been awarded the prestigious Indira Gandhi Award for National Integration, for his vision of oneness of the Indian people, his deep humanism and his social concern.

12 NRI business tycoon, Lakshmi N Mittal owned Ispat International has emerged as world's largest steel maker with its merger with the Netherlands based LNM holdings and US International Steel Group to form Mittal's Steel Corporation. The combined Mittal Steel will be the largest and the most global steel company in the world and will be listed on the New York Stock Exchange and Euronext Amsterdam. Lakshmi N Mittal will be the Chairman and Chief Executive of Mittal Steel.

13 Press Note 18 sets out the government's policy for approval of new projects for companies from abroad, when they already have an existing Lint Venture in India. The guidelines were set out in a Note numbered 18, by the Department of Industrial Policy and Promotion, for public information; hence it is called Press Note 18.

(Compiled by Mr Madhu R. Sekhar, Asstt. Editor, Yojana (English))

Dear Readers,

From this issue, Yojana is launching two new columns, to provide you up-to-date information. "In The News", we will have major socio-economic decisions of the central and state governments and this will also include important events/achievements.

The second column "Successful Government Initiatives" deals with developmental efforts of people, NGOs governments etc. As this is an in house effort, valuable opinions of the reader's are invited.

–Chief Editor

IAS 2005 IFS/NET

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INDIA AND EU

Strategic Partnership

INDIA AND the European Union have decided to embark on a strategic partnership to strengthen economic and political ties and agreed to intensify cooperation and take action to facilitate and expand bilateral trade and investment flows.

A joint statement issued on 8th November after the fifth Summit meeting between the Prime Minister Dr Manmohan Singh and the EU in the Hague said that the two sides decided to set up an energy panel to coordinate joint efforts. The statement laid emphasis on intensifying cooperation and taking action to facilitate bilateral trade and investment flows to reap the mutual benefits of increased economic interaction between India and the European Union.

India is the sixth nation with which the EU has a strategic partnership after USA, Canada, Russia, Japan and China.

India and EU

	India	EU
Population (billion)	1,060	454.4
GDP Per capita ($)	2,900	24,027
Total Imports ($ billion)	90.6	1,633
Total Exports ($ billion)	96.6	1,570

India is not economically at par with any of the five countries with which the EU has strategic partnership. If the EU is offering to upgrade its ties with India, it is more a recognition of its potential, particularly its market and technological potential.

(Based on inputs from Agencies)

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A Stable Policy for Credit Flows

Dr Pyaralal Raghavan

Overall, the broad direction of the changes announced in the mid-term review is towards enhancing flow of credit to the buoyant industrial and export sectors

THE RESERVE Banks review of the annual policy in the second half of the fiscal year 2004-05 was keenly awaited as expectations of a change in monetary stance consequent to some of the unanticipated developments in both the domestic and global economy over the recent months.

The faster than expected recovery in the global economy and the continued upturn in the commodity prices together with the hardening of the international crude oil prices had led to a change of the monetary stance of many of the central banks in the industrialized countries and especially in the United States.

Apart from these global developments there were also some new unexpected trends in the Indian economy. The delay in the progress of the South West monsoons and the deficiency in rainfall in many areas had dampened hopes of any significant improvement in agriculture production. More importantly, this development coincided with a sharp pick up in wholesale prices with the annualized weekly rates soaring up from 5% in end May 2004 to a peak level of 8.3% by end August 2004.

High headline inflation rates and the unabated rise in oil prices had buoyed up inflationary expectations and led to anticipations about a cyclical upturn in interest rates. Many believed that the central bank had no option but to follow up its previous efforts—when it attempted to address the liquidity overhang by increasing the Market Stabilization Scheme ceiling to Rs 80,000 crore and by raising the CRR to 5 per cent—with more restrictive measures.

But the mid term review set aside all such speculations by holding on to a stable bank rate of 6 per cent set in April 2003. However, the fixed repo rate was increased by 25 basis points to 4.75 per cent even while the fixed repo rate was maintained at 6 per cent to maintain parity in the rate differentials. This has been cited as an indication of a subtle but firm change in the Reserve Bank's stance on the interest rates. One major factor that seems to have prompted the Reserve Bank to largely maintain the status quo in the bank rate seem to be the steady slackening in the inflationary trends over the last few weeks.

Numbers show that headline inflation as measured by the WPI on a point-to- point basis has gone down to 7.1 per cent by the second week of

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October. And average inflation was at 6.2 per cent as compared to the 4.9 per cent a year back. The central bank has also noted that the reason for the increase in wholesale prices was also very skewed with a few products like iron ore, oil seeds, fuel, basic metals, non-metallic minerals and non-electrical machinery accounting for a substantial part of the increase.

Supply side factors was the major reason for the spurt in prices of most of these items and there was little that a pro-active monetary policy could do about it. Any hard measures would only have served to further restrict the overall growth of the economy and this would have been detrimental especially since the Reserve Bank has reduced the growth forecasts from the 6.5-7 per cent range announced earlier to the 6-6.5 per cent range now. However, the bank has raised the inflation rate projections for the year from 5 per cent to 6.5 per cent on a point-to-point basis.

Banking

Other operational measures that were announced in the mid term review focused on reducing some of the slackness noticed in the banking sector over the recent months. One such initiative was the steps to defray the slower growth of bank deposits. Thus the decline in the non resident deposits inflows into the banking system over the fiscal year—by around $ 2.3 billion by July—seem to have prompted the central bank to raise the ceiling on Non Resident (External) Rupee deposits to LIBOR/SWAP rates of US dollar of corresponding maturities plus 50 basis points. Banks were also allowed to reduce the minimum tenor of retail domestic deposits under Rs 15 lakhs from 15 days to 7 days.

The mid term review also gave added emphasis on further fine-tuning the credit delivery mechanism so that adequate and timely credit is delivered to all sectors of the economy. A measure taken up to remove the bottlenecks in the credit delivery mechanisms was the dispensation of the restrictive provisions of the service area approach in bank lending except in the case of government sponsored programs.

Many steps were also announced in the area of priority sector lending including the increase in credit limit on advances for agriculture machinery and distribution of inputs for allied activities. Banks were also asked to increase their disbursements to small and marginal farmers to 40 per cent of the direct advances under the special agricultural credit plans (SACP).

SACP mechanism is to be now extended to the private sector banks and all banks are to raise the credit disbursements to agriculture by 20-25 per cent in 2005-06. The Indian Banks Association has also been asked to take up remedial measures to tackle the problems arising with the Kisan Credit Cards as detailed out in the national impact assessment survey done by the National Council of Applied Economic Research.

Another major area that received the attention of the Reserve Bank was credit to the small-scale industries. SSI credit limits on composite loans for fixed assets and working capital requirements through single window schemes was raised from Rs 50 lakhs to Rs 1 crore. Securitisation of loans to the SSI sector is also to be encouraged by treating bank investments in securitised assets arising from direct lending to the SSI sector as part of the mandated priority sector lending requirements. Banks have also been encouraged to lend finance to NBFCs against second hand assets financed by them.

In the case of the housing sector the signals sent were mixed. On the one hand the loans to the housing retail sector was to encourage by allowing the Director, Board of Banks to include house loans of up to Rs 15 lakh in both urban and rural areas as part of priority sector lending. However, the Bank also announced a temporary counter cyclical measure to dampen the strong growth of housing credit by putting in place risk containment measures that sought to raise the risk weight on housing loans from 50 per cent to 75 per cent. Perhaps the idea was to encourage more emphasis on quality assets rather than quantity. Similarly the risk weight on consumer credit was also raised from 100 per cent to 125 per cent including on personal loans and credit cards.

Increasing the flow of credit was also to be encouraged by initiatives for mainstreaming micro credit and enhancing the outreach of micro credit providers. Banks are now to increase credit linkage to 5.85 lakh self help groups by March 2007.

New Initiatives

Among other measures announced were also a few new initiatives to further develop the commercial paper markets. These include steps to reduce the minimum maturity period of the commercial paper from 15 days to 7 days, reporting of the issuance of commercial paper on the negotiated dealing system platform by the end of the day and the formation of a special group to suggest rationalization and standardization of processing, settlement and documentation of commercial paper issuance.

Overall the broad direction of the changes announced in the Mid Term review is towards enhancing flow of credit to the buoyant industrial and export sectors. The central bank has strongly emphasized that the current overhang of excess liquidity in the economy will continue to be managed even while it expects the supply shocks emanating from the external sector to dissipate and help bring down inflation rates in the medium term. ❑

SUCCESSFUL GOVERNANCE

Tools for Rural Transformation

The Village Resource Centre (VRC) Project is a partnership made to uplift the life and livelihood of rural India.

TO DISSEMINATE the portfolio of services emanating from the space system as well as other Information Technology (IT) tools, directly down the line to the rural communities, a partnership between ISRO and the M.S. Swaminathan Research Foundation was formed to address the dynamic and critical needs of rural communities in the most efficient ways.

Inaugurating the VRC project on 18th Oct' 04, via INSAT link from New Delhi, the Prime Minister said the Department of Space had become a role model for other institutions to emulate. Unless the benefit of science and technology are taken to the villages, the country could not eradicate poverty, ignorance and disease.

The ISRO-MSSRF – Village Resource Centre (VRC) Project is a partnership made to uplift the life and livelihood of rural India. It aims to promote a single window delivery need based services in the areas of education, health, nutrition, weather, environment, agriculture and livelihoods to rural women and men. The VRCs will handle both dynamic and generic information to empower rural communities through spatial information infrastructure including broadband, Internet, telephone and fax. It will help launch a knowledge revolution in rural India designed to enhance ecological and livelihood security and accelerate human development and quality of life by taking the benefits of the space age for improving the productivity, profitability and sustainability of agriculture and for generating value addition on farm and non-farm employment.



The Prime Minister, Manmohan Singh, inaugurating the ISRO-M.S. Swaminathan Research Foundation-Village Resource Centre Project via satellite link from New Delhi at the MSSRF in Chennai

The Information Village Project of the MSSRF stands witness to how technology enhances networking and sharing of knowledge and information. It provides an avenue on facilities linking the women, men and children of village with government departments, NGOs, academic institutions and experts. Based on Government entitlement information, several women have started their own business. The farmers got good price for their grains from different markets. School teachers are using the educational CDs to improve the science/arithmetic knowledge of children. Panchayat (Local body) leaders are keeping the accounts and typing letters in the knowledge centers. Old people share their traditional medicinal knowledge and make it available at the centers for various purposes to help improve their centers improve their lives.

Technological divide has been an important factor in further widening the already extensive gap between the rich and poor. The challenge is to make technology an ally, and not an adversary, in the movement for economic, social and gender equity. ❑

Inputs received from Indian Space Research Organisation and M.S. Swaminathan Research Foundation.
Dr Sapna N. Singh, Editor with inputs from M. Sumukan, Editor, Yojana, Chennai.

Rights of the Disabled

Anant Kumar

THE INDIAN constitution promises not only political but also social democracy. Democracy in any sense cannot be established unless certain minimal rights, which are essential for a free and civilized existence, are assured to every member of the community irrespective of caste, colour, creed, religion, language and sex. The benchmark of good governance is the welfare of its people. Every citizen needs to be assured that he/she is protected by the society in which he/she lives. This is important for the persons with disability. Disadvantaged as they are, they need to know not only that they are equal citizens of this great country but also that society will ensure that they can get an equal opportunity in every field viz. issues of education, employment, welfare, community living, justice and other aspects of daily living.

There is a strong need to provide information, opportunities, special services and a disable friendly environment- providing them equal opportunities and rights

The traditional approaches of tackling problems associated with disability have ranged from elimination to indifference to charity to sympathy to welfare. In the present scenario, the disabled are viewed as individuals with a wide range of abilities and each one of them willingly and capable to utilize his/her potential and talents.

The Fundamental Rights are envisaged in Part - III of the Constitution, which are uniformly available to every citizen of India including the disabled irrespective of caste, colour, creed, religion, language and sex. The Indian Disability law treats disability as a civil right rather than a health and welfare issue. The law recognizes that the primary issue facing disabled people is their exclusion from the mainstream activities of the society and hence the emphasis in the law is on full integration and participation.

Educational laws: The right to education is available to all citizens including the disabled. Article 29 of the constitution guarantees the admission of every citizen including disabled into any educational institution maintained by the state or receiving aid out of state funds irrespective of grounds of religion, race, caste, language, or any of them. Article 45 of the constitution directs the state to provide free and compulsory education for all children including the disabled up to the age of 14 years. For admission to college, University and professional courses the disabled persons shall not be subjected to any kind of disentitlement if they are otherwise fit & eligible to pursue higher courses of study.

Family Laws: The laws relating to marriage are uniform to disabled and non-disabled class. There is no bar in respect of a disabled person having relation with non disabled person provided both are of marriageable age and do not suffer from mental illness of are in *sapindas* of each other unless permitted by the custom or usage under Hindu marriage Act. Marriage has to be performed with free consent of two parties of the opposite sex. The rights

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and duties of disabled and non disabled are governed by specific provision contained in Hindu Marriage Act, Christian Marriage Act, Parsi Marriage and Divorce Act, the Special Marriage Act and the Muslim Marriage Act.

The Succession Laws: The disabled are not deprived of succession or inheritance to property. The physical inability or physical deformity would not disentitle a person from inheriting ancestral property. In fact the disabled person can also dispose of his property by writing a will provided he understands the importance and consequence of the will at the time of making the same. A Will is valid if it is written by sound mind. Even a blind person or those who are deaf and dumb can write the will if they understand the contents of the same.

Labour Laws: The labour laws are made to create a harmonious relation between an employee and employer. The laws applied uniformly to disabled and non disabled. A worker or employer who meets with some accident during the course of his employment can ask for such compensation provided in Workmen Compensation Act and are entitled for treatment under the Employees State Insurance Act. The service rule of the Government provides that employees who become disabled should be adjusted in a post where his disability will not prevent him for rendering work.

Judicial Procedure: Every citizen (including disabled) is treated equal in eyes of law. Those who are disabled can sue others including non-disabled for infringement of their rights. Under the procedure followed by court a minor can be represented by guardian or by next friend who can be appointed by court depending upon the circumstances of each case.

Income Tax: The Income Tax Act, 1961 recognizes the plight of the disabled and allow concessions to the blind or those subject to permanent physical disability or to those subject to mental retardation and also allows deductions incurred on the maintenance of the disabled. It also allows deductions to citizens above 65 years of age. A disabled can claim exemption up to 40 thousand rupees if he has the certificate by any physician, surgeon, oculist or a psychiatrist and the same has to be produced before the Assessing officer in respect of first assessment year of which he claims deduction under this section.

Society also needs to know that the disabled are equal citizens of this country and that their rights have to be respected and ensured. In the new scenario of awareness the disabled have learnt to move from an environment of 'expectation' to an environment of rights.

This has resulted in the institution of three Acts promulgated by the Government of India.

The acts were passed in order to create harmony between disabled and non disabled class.

The Rehabilitation Council of India Act, 1992: This act was passed in 1992 and amended by the Rehabilitation Council of India (Amendment) Act, 2000 for monitoring the training of professionals and personnel, promoting research in rehabilitation and special education as additional objectives of the Act.

1. To have the right to be served by trained & qualified Rehabilitation Professionals whose names are borne on the register maintained by the council.
2. To have the guarantee of maintenance of minimum standards of education required for recognition of rehabilitation qualification by Universities or Institutions in India.
3. To have the guarantee of regulation of the profession of rehabilitation professionals by a statutory council under the control of the Central Government & within the bounds prescribed by the statute.

Persons with disabilities (Equal Opportunities, Protection of Rights and Full Participation)Act, 1995: The Indian Parliament, for the first time has legally endorsed the right to access for the disabled people to education and vocational training, employment practices, travel on public transport and mobility schemes, barrier free environment and integrated living, information and communication strategies, independence and dignity.

1. Right to equal opportunity with the non-disabled and protection of legal rights of legal Rights of disabled.
2. Right to free education to every disabled children upto the age of 18 years.
3. There shall be reservation of posts for the disabled upto 1 per cent each for those who have blindness, impaired hearing or cerebral palsy for which posts will be identified by the government every three years. Vacancies not filled up can be carried forward to the next year.
4. Special employment exchange to provide employment for the disabled.
5. All Government educational institutions & aided institutions shall reserve upto 3 per cent seats for persons with disabilities. Vacancies are to be reserved in poverty alleviation schemes. Incentives are also to be given to employers to ensure that 5 per cent of workforce is composed of disabled persons.
6. Disabled will be entitled to preferential allotment of land at confessional rates for housing and for rehabilitation purposes.
7. There shall no discrimination of the disabled in transport facilities, traffic, signals on the road, or in built environments and in government employment.
8. The chief commissioner and the state commissioner will look into

the complaints relating to deprivation of rights of the disabled.

9. Those who avail or attempt to avail benefits meant for the disabled in a fraudulent way are punishable with imprisonment up to 2 years or with fine up to Rs. 20,000/-.

The National Trust For Welfare of Persons with autism, cerebral palsy, Mental Retardation and Multiple Disabilities Act, 1999: The Central Government is obliged to set up, in accordance with this Act and for the benefit of disabled class, a National Trust for welfare of persons with autism, cerebral palsy, Mental Retardation and Multiple Disability at New Delhi.

Rights of the Disabled under the National Trust Act, 1999: Right to be placed under a guardian apointed by the local level committees in accordance with the act. The guardians so appointed have the obligation to manage the property and the person well.

Right to have the appointed guardian removed where he is guilty of misappropriating the property or neglecting the same.

It is the obligation of the trust to maintain adequate provisions for adequate standard of living of any beneficiary named in the bequest and to grant financial aid to the registered organization working for the benefit of disabled persons.

Where the board of trustees is unable to perform the duties the same can be reconstituted and or superceded on a complaint of registered organization.

The Mental Health Act, 1987: The attitude of the society towards persons afflicted with mental illness has changed considerably and it is now realized that no stigma should be attached to such illness, as it is curable, particularly, when diagnosed at an early stage. Thus the mentally ill persons are to be treated like any other sick person and the environment around them should be made as normal as possible.

This Act is to consolidate and amend the law relating to the treatment and care of mentally ill persons, to make better provision with respect to their properly and affairs and for matters connected therewith or incidental thereto.

Persons with disabilities and their families, especially parents are often the victims of non-information. Parents are not always told the truth about their children's disabilities; not told early enough for timely intervention; not told with sensitivity and are not informed about appropriate referral services. There is strong need to provide these information, opportunities and special services. This will help us to make disable friendly environment providing them equal opportunities and rights. ❑

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Pranayam : The Cure for All Maladies

Rajendra Roy

***Swami Ramdevji has brought a health revolution in the lives of crores of Indian people by awakening them to realize the benefits of our ancient methods of* Yog *and* Pranayam**

THE SIMPLE meaning of Pranayam is controlled breathing. Pranayam, though concerned with the breath, gives good exercise to various internal organs as well like the brain, nerves lungs, heart, liver, kidney, pancreas, the intestines and the whole body. The power of controlled breathing (*Pranayam*) can be tested by any person. If you are tense and stressed waiting for your turn in an interview, heart rate going high, facing any mental problem or are very angry, take only 10 slow and deep breaths. You will immediately feel relaxed and the tension and anger will vanish.

This article is based on my personal experience of 30 years on health vis-a-vis the new interpretation given by Swami Ramdevji to *Pranayam* of *Patanjali Yog Sutra*. I am a health freak to the extent of making health the second hobby next to my study of service law. For 21 months during 1983-84 (at the age of 39-40 years), while working as Editor in All India Radio, New Delhi, I used to jog ten and a half kilometers in an hour in the morning from Srinivaspuri to Akashvani Bhawan till I got transferred out of Radio. I have spent thousands of rupees on health books and magazines. For the last 25 years, I have regularly been subscribing to *Reader's Digest* since all its issues have two or three articles on health.

I recall that way back in 1979 or 1980, a full article on *Pranayam* written by Philip Smith had appeared in *Reader's Digest*. Mr Smith had narrated in the article how he cured himself of many chronic ailments by practising *Pranayam* only. In this connection, I am further tempted to reproduce the following story published in May 1998 issue of *Reader's Digest*:

I noticed an elderly patient on a stretcher waiting outside my operation theatre one day. He was not my patient, but his well-preserved appearance intrigued me. Upon looking at his chart I was surprised to see that he was 90 years old. I asked him how he had managed to live so long. He replied simply, 'Just keep breathing'. Contributed by Naris Janviriya.

Swami Ramdevji's method of *Pranayam* as holistic prevention and treatment of all diseases is different from all traditional books on *Yog* and *Pranayam* written by great *Yogacharyas*. No one had given so much emphasis on *Kapalbhati* as Swamiji is doing. All books advocate

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belly breathing whereas Swamiji preaches breathing from the lungs and the chest.

Till my wife, Smt. Usha Roy and I attended his *Sadhana Shivir* (7 to 13 October, 2004) at Jawaharlal Nehru Stadium, New Delhi, I was very sceptical of Ramdevji's claims of reducing weight by 5 to 10 kilograms in a week, completely curing diabetes, blood pressure, heart ailments (opening of blockages in the arteries, reducing levels of cholesterol and triglyceride), asthma, depression etc. After reading his book on *Pranayam* and viewing his CD on it, I had been performing his package of *Pranayam* for six months since 5th April, 2004 in addition to my regular 1 hour brisk morning walk with the speed varying from seven and a half to ten minutes a kilometer (the ideal brisk walk is one kilometer in 10 to 12 minutes), but without any apparent reduction in my weight from 67 kgs. I am a regular walker in Lodhi Garden since 1996 and I am fit without any control on diet (I consume average 3 sweets a day). Thus sugar is the main culprit against weight loss. My wife's weight increased from 65 kilograms on 2nd June, 1998 to 69 kilograms on 6th October, 2004 despite her daily regular traditional *yogasan* for one hour in Shahjahan Road Park since 1999. During this seven days *Shivir*, my wife and I reduced weight by 1 kilogram each. On 10th October, 2004 my wife and I donated blood and on the same day, as a *sankalp*, I gave up taking tobacco which I had been addicted to since 1970.

My friend and colleague Shri Ramji Tripathi and his wife also attended the camp. Shri Tripathi and his wife reduced their weight by 5 and 2 kilograms respectively from 83 to 78 kilograms and 74 to 72 kilograms on 16th October, 2004 (in 10 days). On the same day, the lipid profile test of Shri Tripathi showed reduction of 16 mg/dl in total cholesterol from 226 (on 14th July, 2004) to 210. His sinusitis also improved by 75 per cent. Now both husband and wife are doing *yog* and *pranayam* for more than an hour watching Swami Ramdevji on TV.

The conclusion from my experience is that one should not depend on Swamiji's books and CDs on *Pranayam*. He is himself improving his method of *Pranayam* day-by-day and one can feel the difference on TV from what he produced a few years back. He has completely simplified the *Pranayam* which can easily be performed by a child of two years as well as an old man of 100 years without following any rules and regulations. One should never be tempted to increase the speed of strokes in *Kapalbhati* or *Bhastrika Pranayam*. In *Kapalbhati* there should be 60 to 65 strokes in a minute.

All the books on Pranayam emphasise that both the inhalation and exhalation in *Bhastrika* should be forceful. Swami Ramdevji advocates only full and slow breathing in and breathing out in *Bhastrika*. Dr Naresh Trehan, the heart specialist of Escorts, New Delhi calls it *Vipasana*, a kind of meditation which rejuvenates him and increases his tolerance level. He practises this for 5-7 minutes in the morning while driving from residence to hospital.

At present, Swami Ramdevji is preaching 6 kinds of *Pranayam* as a package for prevention and self treatment of several chronic and deadly diseases. They are: (1) *Bhastrika* (2) *Kapalbhati*, (3) *Bahya Pranayam*, (4) *Anulom – Vilom Pranayam*, (5) *Bhramari Pranayam and* (6) *Omkar Jap*. These *Pranayams* and their methods can be learnt from live telecasts of *Sadhana Shivirs* conducted by Swami Ramdevji.

Swamiji demonstrates that a healthy person should do *Bhastrika* for 2 minutes; *Kapalbhati* for 5 to 10 minutes; Anulom-Vilom for 5 to 10 minutes, 3 rounds of *Bahya Pranayam*; and 5 rounds of *Bhramari Pranayam* followed by 3 rounds of *Om Jap*. Persons suffering from chronic diseases can perform both *Kapalbhati* and *Anulom-Vilom* for 10 to 15 minutes in the morning as self treatment. Besides the above package, do *Ujjayi* Pranayam 10 times to cure problems of colds, stammering, snoring, thyroid, tonsil, blood pressure, depression, heart, etc.

In the end, I would like to mention here that even today I do not support all sorts of sermons of Swamiji. For example, his preaching that celibacy (*Brahmacharya*) should be maintained to get the maximum benefits from *Pranayam* is a myth. Sex is the most natural instinct of a living being – animals as well as human beings and suppression of it may cause adverse effect on health. Moreover, in modern age, one cannot think of living a normal life with total *Brahmacharya*.

Further, I do not agree with his saying that drinking one glass of water in the morning will relieve a person from constipation. I am constipation prone to Delhi water. I had tried several medicines (*Trifala, Kabjahar,* Homeopathy, etc) in addition to my regular exercise since 1983, to get rid of constipation but in vain. Drinking one and one-fourth to one-and-half litres of water at a stretch in the morning has kept me completely free from constipation and indigestion since 1996. Controlled and balanced diet is a must for maintaining good health. Shri R.P. Puri, Chairman of the Central News Agency (CNA) is quite vibrant with energy and is looking after his day-to-day business at the ripe age of 84. He reduced his weight by 30 kgs from 90 to 60 kgs and has maintained it for the

last 30 years by consuming only 1350 calories a day. On the other hand, however, my friend and colleague, Shri M. Y. Siddiqui, has maintained perfect health without following strict egimen of diet but religiously doing only regular, 15 to 20 minutes in-house exercise (no walking, no gym) including our traditional *dund-baithak* for 40 years. He does not touch tea or coffee to maintain good health with moderate control on diet.

While talking to the media after reviewing the colourful parade of the 61 Cavalry on 23rd October, 2004 in New Delhi, the legendary Field Marshal SHFJ Manekshaw, in reply to my question on his robust health said in his thundering voice, "today I am 90 years, six months and 13 days old" and you can yourself judge the condition of my health.

It is surprising that Swamiji is silent about the benefits of milk and milk products which have been our staple food for thousands of years and which kept Indians healthy. If 3 to 4 servings of low fat milk or milk products like curd or cheese (Calcium is responsible for weight loss and reduction in high blood pressure) a day is combined with *Kapalbhati*, it will double the process of fat loss. But do not expect any miracles from *pranayam*. It will teach you to lead a healthy lifestyle. The obese people have quick effect on weight reduction. You can see that 60 per cent of the participants in the *Sadhana Shivirs* are obese.

Whatever may be the reasons for my difference of opinion on some points, it is a fact that Swami Ramdevji has brought a health revolution in the lives of crores of Indian people by awakening them to realize the benefits of our ancient methods of *Yog* and *Pranayam*. He is doing a great service to the humanity, free of cost. Since his only objective is to keep humankind healthy and disease free, we all should practise *Pranayam* and chart his slogan of "health is our birth-right" to make his noble mission a success. It will also relieve the Government of the huge burden of spending hundreds of crores of rupees on healthcare. Dr A. Ramadoss, Union Minister for Health and Family Welfare announced on the 4th November, 2004 in New Delhi, on the occasion of 5th Editor's Conference on Social Sector Issues, that the Government is taking steps to teach *Yoga* at the Morarji Desai National Institute of Yoga at Ashoka Road, New Delhi. He also said that while our doctors are going to the U.S.A. for higher studies in Cardiology, the Cardiologists in America have made practice of *Yoga* compulsory for treatment of heart patients. No doubt, *Yog* is a unique Indian contribution towards a healthy world. ❑

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New Initiatives in Civil Aviation Sector

Praful Patel

THE CIVIL Aviation sector has been at the focus of media attention for quite some time. Until a few years back, the sector was perceived as servicing the elite, and consequently not viewed as requiring a central place in policy planning in a developing country like India. Now that the country is on a high-growth path with increasing awareness of its utility with trade and commerce, tourism, domestic and foreign investment, creation of infrastructure and generation of employment. This has made the Civil Aviation sector media as well as Government attention towards its development as a major partner in the national economy.

The Civil Aviation sector has reached a point from where it can take off through concerted efforts and the right policy framework

The Civil Aviation sector has reached a point from where it can take off through concerted efforts and the right policy framework.

To be sure, it has to do a lot of catching up not only with the world, but also internally vis-a-vis some other sectors such as IT and telecom which appear to have reaped visible benefits in the wake of general reforms and liberalisation. To give a push to the sector, a comprehensive civil aviation policy has been formulated after much deliberations with all the public sector undertakings and agencies within the Ministry, with private airline operators and also with trade bodies like CII, FICCI, ASSOCHAM, TAAI and IATO.

Domestic air transport sector has now three major players—Indian Airlines, Jet Airways and Sahara. The intense competition among them has forced the airlines to offer various kinds of discounted fares and packages. The competition has also forced the public carrier, Indian Airlines to respond to market conditions in a business like manner rather than like a PSU, and come up with an aggressive pricing strategy and new products. As a result the consumer has emerged a gainer. As Indian Airlines is facing a problem of old and ageing fleet, major fleet acquisition is being planned for it, that would partly replace and augment existing capacity. This may further enhance the profile of IA in terms of the service they offer.

The entry of Air Deccan as a niche player covering small towns at low fares has opened a new vista in the domestic air transport scene which is popularly being described as 'low cost' airline. The civil aviation sector is likely to see more and more players connecting smaller stations with aircraft of appropriate capacity at affordable prices. The aim of any worthwhile civil aviation policy would be to achieve increased regional connectivity at

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affordable prices and make air transport accessible to more and more people.

While the domestic air transport scene is characterised by capacity surplus, the international sector is beset with severe capacity shortage. The international air transport is governed by bilateral air service agreements between India and various countries, which stipulate the number of flights, capacity and ports of entry to be allowed to each other on reciprocal basis. It view of non-utilisation of the full entitlement of seats as per the bilateral agreements due to fleet constraints of national carriers who have not procured any aircraft for several years, a serious policy question has arisen.

While the fleet acquisition programme of Air India is being expedited, several initiatives have been taken to open up Indian skies for increased international connectivity to and from the country. The ASEAN countries have been allowed to operate upto seven services to and from New Delhi, Mumbai, Chennai and Kolkata. Sri Lanka has been allowed to operate daily services to Delhi, Mumbai, Chennai, Bangalore, Hyderabad and Kolkata and as many services as they wish to 18 other destinations in the country. These are of course subject to reciprocal rights for Indian carriers. It has also been decided to allow Indian private airlines to operate to all the SAARC countries against Indian unutilised entitlements. Furthermore, India has been operating open sky policy for a limited period to take care of the peak season rush. Along with all these initiatives, the Government is committed to strengthening our national carriers as well for providing increased international connectivity to the country.

Infrastructure

To make national airports of the world-class standard, serious issues such as the entire passenger handling aspects, comprising customs and immigration and ancillary services such as taxis and terminals are being readdressed seriously. These services are handled by multiple agencies such as the Airport Authority of India (AAI), CISF, Customs, Ministry of Home Affairs and the State Police. Complaints about inefficiency, corruption, harassment by touts or crimes faced by the passengers tarnish the image of the country as a whole. Therefore, measures are being taken to provide world class coordination with other Ministries and agencies of the Government besides, modernising and restructuring the provision of various connected services at the airport.

"The aim of any worthwhile civil aviation policy would be to achieve increased regional connectivity at affordable prices and make air transport accessible to more and more people."

The restructuring of Mumbai and Delhi airports through joint venture, inviting private participation has been a matter of wide discussion. The idea behind inviting joint venture is to bring in additionality of resources in view of the size of the investment. It would also bring in global technology and operations and management practices. In all these arrangements, the service conditions of the existing employees will be fully protected. Expressions of Interest (EOI) have already been received and are being processed. Request for Proposal (RFP) documents will be issued to the shortlisted parties for soliciting detailed project proposals.

Two greenfield airports at Bangalore and Hyderabad are also planned on a Built, Own, Operate and Transfer (BOOT) basis with public private participation. The concession agreement for Bangalore was signed on July 5, 2004 with the project developers. For Hyderabad international airport, the consortium to implement the project has been identified and the concession agreement is under examination.

With such initiatives to attract private sector investment for additional resources, the Airports Authority of India (AAI) can now utilise its resources for developing other airports in the country. Had these initiatives not been taken, the entire AAI resources would have been exhausted only for a few airports like Delhi and Mumbai, leaving hardly anything for others. AAI is planning to upgrade and modernise 22 other important airports of the country to the world class standards, most of which are famous tourist destinations.

Some other important issues are also being addressed. They include bringing round the systematic cost in the sector on account of taxes and duties, need for an independent aviation economic regulatory authority and the appropriate mechanism (whether through Route Dispersal Guidelines or provision of subsidy) for providing air services to remote and commercially unviable sectors in the comprehensive long-term civil aviation policy.

The Government is committed to provide efficient, reliable and affordable air transport services and infrastructure to the people of the country as well as international travellers. (PIB Features) ❑

Security Issues in E-Commerce

Sunnykutty Thomas

E-COMMERCE IS concerned with buying and selling information, products and services through computer communication networks. In e-commerce, netizens give high priority to the security of information exchanged through Internet. Security, privacy, confidentiality and integrity of the transactions are essential for the success of e-business.

Cryptography is the art of performing secure transactions on the Web. It has become one of the central tools for maintaining privacy and confidentiality and to protect information of real value against hackers and organised criminals.

Cryptography is the art of keeping information private and which is unreadable to another person without the right key. Cryptanalysis is the art of compromising algorithms developed in cryptography. Cryptology is the branch of mathematics that studies the mathematical foundations of cryptographic methods.

Cryptography has become one of the main tools among others, for privacy, confidentiality, integrity, authenticity, non-repudiability, access control, electronic payments, and corporate security. Cryptography, in electronic businesses, helps to ensure that no-one else, other than the intended person, reads the message.

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Basic Terminology:

Plain text : In cryptographic terminology, the message transmitted through electronic medium is called plain text or clear text. It is the readable form of the document.

Encryption : In order to keep the secrecy of an e-commerce transaction, the message should be made unreadable to others. The process of making the contents of the message unintelligible to the unauthorised reader is called encryption. It is the process of translating the readable form of the document into an unreadable form.

Cipher text : The encrypted message is called cryptograms or cipher text. Cryptographic transformation is done in such a way that each bit, character or word of the plain text is replaced by a bit, character or word of the cipher text.

Decryption : The process of retrieving the plain text from the cipher text is called decryption.

Dr Sunnykutty Thomas is a lecturer at St Dominic's College, Kanjirapally, Kottayam (Dist.), Kerala.

Cryptographers : Persons who do cryptography are cryptographers.

Cryptanalysts : Practitioners of cryptanalysis are cryptanalysts.

Key : The knowledge about cryptographic transformation is technically known as key. In secret key cryptography, a single key is used for bothe encryption and decryption. In public key cryptography, the encryption key is the public key and decryption key is the private or secret key.

Basic Cryptographic Algorithms: There are two types of encryption algorithms, symmetric (or secret-key) and asymmetric (or public-key). In symmetric algorithms same key or password is used for both encryption and decryption, whereas asymmetric algorithms use different keys or passwords for encryption and decryption.

Symmetric algorithm or secret key cryptography is based on a secret key which is shared by the parties engaged in secure communication. The message sent is encrypted i.e. transformed using a secret key. The receiver applies the inverse transformation using the same secret key and recovers the message.

The idea of encryption through transposition and substitution can be clearly understood from the following example. Suppose the plain text is 'sunnykuttythomas'. It is first transformed using transposition usually applied on blocks of characters. For this a transposition key is required. Suppose the transposition key determined is '34521'. The key implies that, as the first step the message should be grouped into 5 character blocks since there are five characters in the transposition key, and then the characters should be permuted using the rule '34521'. That is, replace 1st character by the 3rd character, 2nd character by the 4th character, 3rd character by the 5th character, 4th character by the 2nd character and 5th character by the 1st character. A block at the tail, if any, which has less than 5 characters is left unchanged. By applying the transposition key, the plain text of 'sunnykuttythomas' becomes the permuted plain text of 'nnyusttyukomahts'. The next transformation is substitution. For instance, a substitution rule with key 3 would replace every letter by a letter that is 3 letters away from it in the collating sequence, i.e. A becomes D, B becomes E, C becomes F ... X becomes A, Y becomes B and Z becomes C. After applying this transformation, we get the cipher text of 'qqbxvwwbxnrpdkwv'. In this example a person who has no knowledge about the transposition and substitution keys cannot decode the message.

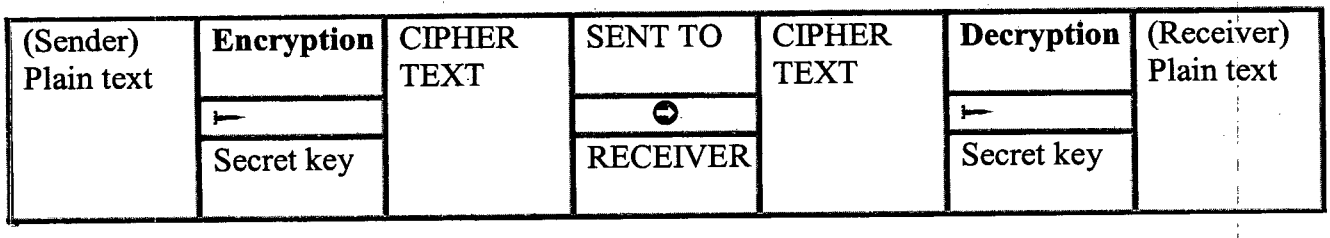
The most common secret key tdechniques are steam ciphers and block ciphers. Stream ciphers can encrypt a single bit of plain text at a time, whereas block ciphers can take a number of bits (typically 64 bits in modern ciphers), and encrypt them a single unit. The most widely used symmetric cipher is DES (Digital Encryption Standard), which is introduced by IBM in 1975 and standardized by the U.S. Government in 1977. DES applies transformation on blocks of 64 bits corresponding to the binary encoding of the message text. A new standard called AES (Advanced Encryption Standard) is being developed which uses 128 bit blocks and 128 bit keys. AES is not yet standardized and DES is still used widely.

Asymmetric algorithm or public-key cryptography is based on two distinct but related keys. Asymmetric ciphers permit the encryption key to be public, allowing anyone to encrypt with the key, whereas only the proper recipient, who knows the decryption key, can decrypt the message. RSA is the most widely used asymmetric encryption algorithm that was developed in 1975 by the researchers - Ron Rivest, Adi Shamir and Leonard Adleman. RSA system works as follows:

Take two prime numbers, p and q,

FIG. 1

Secret Key Cryptography



(i.e. numbers which cannot be divided evenly by an other number), and multiply together to get their product N.

Series of Numbers

Normally, if we know only N, then it is extremely difficult to determine what the factors p and q are if N is sufficiently large. In cryptography, N assumes a value that is greater than 500 bits (150' digits). The message is written as a series of numbers, each of which is smaller than N but has approximately the same length as N. Each of these message numbers M is then multiplied by itself e times. Then, the result of this set of multiplication is divided by N, and only the remainder of that division is kept and is the encrypted message. To decrypt the message, the recipient uses another specially chosen number d, which is typically a very large number (of the order of half the length of N). This number is chosen so that if we now multiply the encrypted message with itself d times, divide by N, and keep only the remainder, then we get the original message back. The only way known to find d is to know p and $q.e$ and N is the public key, which is published, while d is the private key, which must be kept secret. e and d are symmetric in that using either as the encryption key, the other can be used as the decryption key. Through this method, electronic documents can be signed.

Digital Signatures: In e-commerce, authentication is one of the most important factors to build a trustworthy relationship among the parties. Authentication is done by signing documents. In order to make electronic documents legally usable, it is necessary to have a mechanism that provides a means to authenticate the author of a document. Digital signatures are used for authentication.

A digital signature is a small data created using some secret key, and there is a public key that can be used to verify that the signature was really generated using the corresponding private key. It is used to verify whether the message really comes from the claimed sender or not.

A digital signature is not scanned image of a hand written or typed signature. The digital signature is an electronic substitute for manual signature. It is an identifier composed of a certain sequence of bits, that is created from the message through a hash code. Hash code is a function that reduces every possible message to a fixed number of bits. Hash functions generate message digests or hash value. No matter how big the file is, the hash will always be the same length, and therefore hash value will be different for every message. The hash function is a one-way function. It is possible to generate a message digest or hash value from the message. But it is not possible to find a message that would fit exactly the hash value. The hash code can be seen as a seal on the envelope.

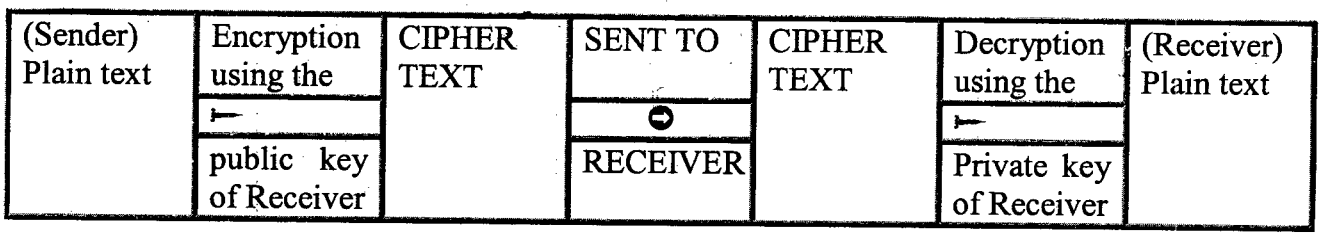
A digital signature of an electronic document is typically created by computing a message digest from the document. The resulting string is then encrypted using the private key of the signer using a suitable algorithm. The resulting encrypted block of bits is the signature. To verify a digital signature, the recipient decrypts the signature using the public key of the sender. If the signature decrypts properly and the result matches that of the message digest, the signature is accepted as valid. The most widely used method of making and verifying digital signature is RSA algorithm.

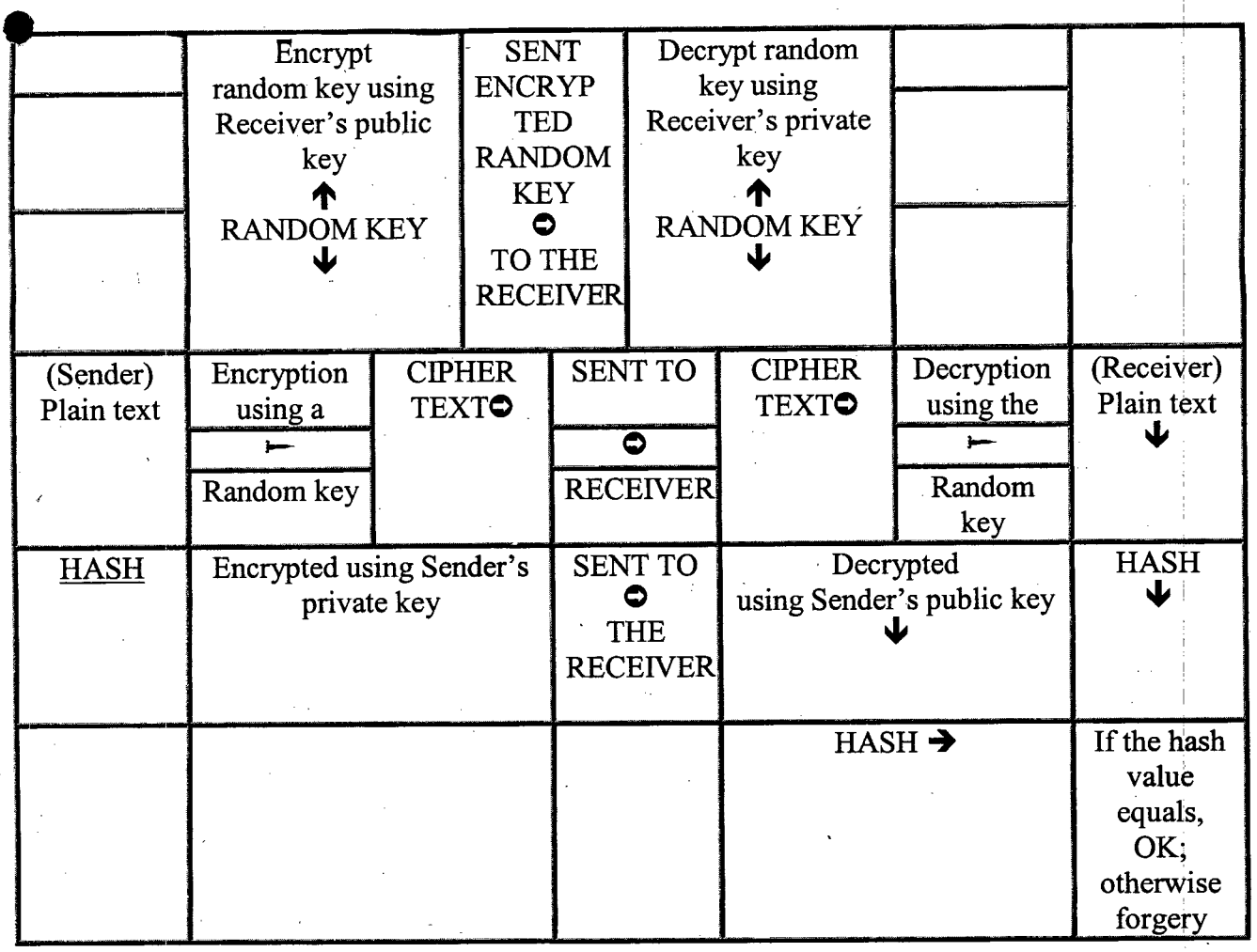
The technique of signing an electronic document can be well understood from the following:

Suppose a sender wants to send an electronic message to the receiver and authenticate the document by putting digital signature., the following are the steps:

1. Sender chooses a random key. He encrypts the plain text using the random key and sends the cipher text so arrived at to the receiver.

FIG. 2
Public Key Cryptography





2. Now the receiver is unaware of the random key used for encryption. Receiver needs key used for encryption in order to decrypt the message. Therefore sender encrypts the random key using the public key of the receiver and sends it to the receiver.

3. Receiver decrypts the random key which is encrypted by using the private key and obtains the original random key.

4. Receiver can decrypt the cipher text by using the random key and gets the original message or plain text.

5. Now the receiver has to be convinced as to the identity of the sender. Signature of the sender reveals his identity.

6. In order to sign the message, the plain text is hashed using a hash function. The hash value, being the digital signature, is tied to the document being sent.

7. Hash value is encrypted by the Sender using his private key and sent to the Receiver.

8. Receiver decrypts the hash value using the public key of the sender. Since we are able to decrypt the hash with the public key of a certain person, it proves that the message comes from that person. Only the person who owns the private key is able to create a message that can be decrypted using the public key.

9. Similarly, Receiver can calculate the hash value of the plain text using the known hash function.

10. If the hash value calculated under step 8 and 9 equals, it can be concluded that the transaction is cent percent OK; otherwise a fake message.

Cryptanalysis is the art of deciphering encrypted communications without knowing the proper keys. Eventhough techniques are emerging for attacking cryptosystems, cryptography stands accepted as a reliable art for ensuring secrecy and authentication to electronic documents. ❑

E-Governance in India

M. A. Lokhande

We can improve our supply chain management with the help of IT and can provide food, medicines, clothes to the needy people without delay

INFORMATION TECHNOLOGY has brought revolutionary changes in every walk of life. It has accelerated the pace of globalization. Use of Internet and computers for different purposes is increasing rapidly. Internet has facilitated an efficient, speedy and transparent process for disseminating information to the public and other agencies working in different fields. The governments formulate the policies and implement them through their administrative machinery. In this process, there has to be downward, up-ward, horizontal, vertical communication between different departments of the government and the citizens. The electronic medias of communication and computers have eased the process of administration. So, E-Governance has become a big buzzword today in government circles.

E-Governance (Electronic Governance) is basically delivery of Government services and information to the citizens using electronic means.

E-Governance involves computerization of services to be provided to the citizens. Another aspect of the E-Governance is computerization of government documents, records and various reports.

E-Governance can be defined as the administrative process through computerization, Internet, Intranet Videoconferencing and other electronic devices. E-Governing is the process of policy formulation and implementation with the help of electronic devices. As the ultimate goal of any Government is the betterment of its citizens, it should have better administrative system well equipped with efficient and effective communication system so that any complaint, enquiry or suggestions made by the citizens are duly considered and they are provided prompt and timely services. For instance, Indians are enjoying the benefits of computerization and automation of Indian Railways, Airlines and bus services for booking and reservation.

The central and the state Governments are trying their best to promote the E-Governance in the thrust areas such as education, health, poverty eradication and providing public utilities. There is a tremendous scope for E-Governance in our vast country in different areas neglected so far due to inaccessibility or communication gap.

In the process of Globalization, information has become power. The quality of administration can be improved by means of advanced

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techniques and methods for collection, analysis and interpretation of the data and Information. Taking into consideration the need of the hour, the Governments are making agreements with software companies viz, Wipro, IBM, Linux Compaq etc. It is noteworthy that the central Government has taken initiative for establishing a National Institute of SMART (simple, moral, accountable, responsible and transparent) Governance at Hyderabad. This institute will be responsible for co-ordination between the center and the state Governments run E-Governance projects.

Schemes and Projects

The state Government of Andhra Pradesh has been a pioneering state in application of computers, Internet and Intranet for effective implementation of its various schemes. The AP government IT department has been providing one network for the state secretariat, collectorates, mandals, the chief planning officer, tehesildars, head of the depts., police stations and other local level administrative agencies. The AP Government has covered 10000 offices spread over 1126 manuals out of 23 districts. Electronic Seva centers in the state are providing different services to the citizens like issuing driving licences, payment of utility bills, issuing trading licences and birth certificates, reservation of railway tickets, insurance premiums payment and booking of accommodation.

In Kerala, a scheme named Akshaya is being implemented to enhance electronic literacy. Under this scheme atleast one member from every family will be trained to use computer and Internet to have day to day access to information.

The MP Government has started two projects viz. Gyandoot and computer enabled school education which covers 26 districts of the state.

The Government of Maharashtra has made computer education mandatory to its employees. The Government of Maharashtra had started SARITA (Stamp Duty Registration with IT Application) in August 2000. The district administration has facility of video conferencing with the chief minister. Almost all the districts have their own websites. The state Government has started to distribute update computerized land records (7/12) to the landholders. The SETU (Society for promotion of Excellence and Transparency in Public Administration for better Understanding) has been providing certificates such as domicile, birth, marriage, property, income etc. The Koshwahini Project has linkages with 33 government treasuries and 292 sub-treasuries handling annually the transactions worth Rs. 70,000 crore.

Tamil Nadu Government has initiated the project connecting all the district courts, the Sustainable Access to Rural India (SARI) and linking the Police and Revenue Departments. Such E-Projects are very useful for effective communication and co-ordination between government departments and the citizens.

There is a tremendous scope for Government to Citizens (G2C) model of E-Governance in our country. Automation and computerization may lead to higher level of efficiency, accountability and transparency.

The central government has taken initiative in promoting Government to Business (G2B) model. For this purpose a single electronic window system will be created for promoting E-Commerce among the central government, the state governments and the private sector. This would be helpful in building a good trade network between the states and the private sector.

Benefits

Electronic Governance has proven its usefulness in implementation of various welfare schemes for citizens like weather forecasting for the farmers, fishermen and tourists, e-learning projects, tele-medicine services, e-service centers, e-voting etc. The benefits of E-Governance may be summarized as follows:

- Electronic governance is an innovative way of administration. It facilitates easy monitoring and tracking of files. There is no place for red tapism.
- E-Governance means transparency, accountability and efficiency on the part of the Government administration. It would be helpful in confidence building among the citizens and the government machinery.
- It is helpful in collecting required data and information from any corner of the world. An effective computer network system (Internet, Intranet) can be helpful in solving the problems immediately. Remember the World Trade Centre tragedy (September 11, 2001). With the help of LEADERS (a network) 290 hospitals were ready to track and accept the injured persons and immediate medical treatment was provided.
- In Indian context electronic service centers have a pivotal role to play. These centers could provide better services to the poor, tribal people living in rural remote areas.
- Tele-Medicine centers could provide necessary medical services

to the citizens with the help of traned health workers.

- E-Governance will be fruitful for the farmers as they would able to get information regarding prices of commodities in different markets, new varieties of seeds, new techniques and methods of cultivation, crop protection guidance. Even an illiterate farmer could E-mail to agriculture universities and colleges regarding his difficulties with the help of trained E-service center operator.

Barriers

- Digital Revolution is responsible for Digital Divide in our country as one can easily observe that some states particularly the states in the south and the west are far ahead of other states in application of electronic devices for administration. The gap between Haves and Not Haves is considerable as far as IT development is concerned.

- Computer use by the citizens in our country is very low in comparison to the developed countries. For instance, there are 450 computers per 1000 population in USA whereas in India only 3 computers for the same member of population.

- One of the barriers in the way of E-Governance in India is the traditional bureaucratic mindset which is not ready to accept the changes in the administration in fear of loosing power and employment. It will take some time.

- The major bottleneck in implementation of E-Governance in our country is infrastructural deficiencies e.g. lack to telephone lines, shortage of power, low bandwidth capacity etc.

- Computer prices are too high. This is one of the reasons of lower use of computers in India. The rates of Internet connectivity are comparatively high.

- The slow progress of E-Governance in India may be attributed to financial deficiencies. The process of computerization and automation has become slow in almost all states due to shortage of funds.

- There has been continuous braindrain of IT professionals from our country. This has lessened the speed of E-Governance in India.

- Illiteracy, lack of training, misunderstanding and lack of confidence in Government policies are the major problems before E-Governance in India.

- In spite of the above mentioned barriers the Government has no option but to continue the process of electronic governance to provide better services to the citizens at minimum costs enhancing its efficiency.

Suggestions

- The Government should make the procedures and rules and regulations simpler and transparent. Information regarding various schemes should be communicated to the beneficiaries so that they are benefited timely. In this regard it may be suggested that there should be active sharing of software developed by one with other states as there is somewhat the similar administrative set up in all the states.

- Computer use in India is comparatively lower because of high prices of computers. It may be suggested that low priced computers like Simputers should be made available on large scale so that a common person could purchase a PC.

- Infrastructure base for the promotion of E-Governance should be strengthened on priority basis. The program of State Information Technology Parks (SITP) should be initiated in all the states to fill up the gap of digital divide.

- E-Governance is the need of the hour. The electronic government projects can be implemented either on Build, Own and Operate (BOO) basis or on Build, Own, Operate and Transfer (BOOT) basis.

- Indian states are multilingual states. Therefore, it needs to implement Universal Knowledge and Language (UNL) projects for all the states like Hindi Net Word.

- Some of the critics of E-Governance are of the opinion that it is expensive and would lead to unemployment. It should be noted that IT oriented services have provided notable job opportunities and only with the help of information technology we can fulfill the expectations of our citizens. We can improve our supply chain management with the help of IT and can provide food, medicines, clothes to the needy people without delay.

- Computer literacy campaign should be undertaken to impart computer education to the masses. ❑

Silent Revolution and An Awakening

A. V. Singh

'Lambadas', a migratory tribe in Telengana region of Andhra Pradesh are in the threshhold of a new horizon. Education is lighting up the path of their children

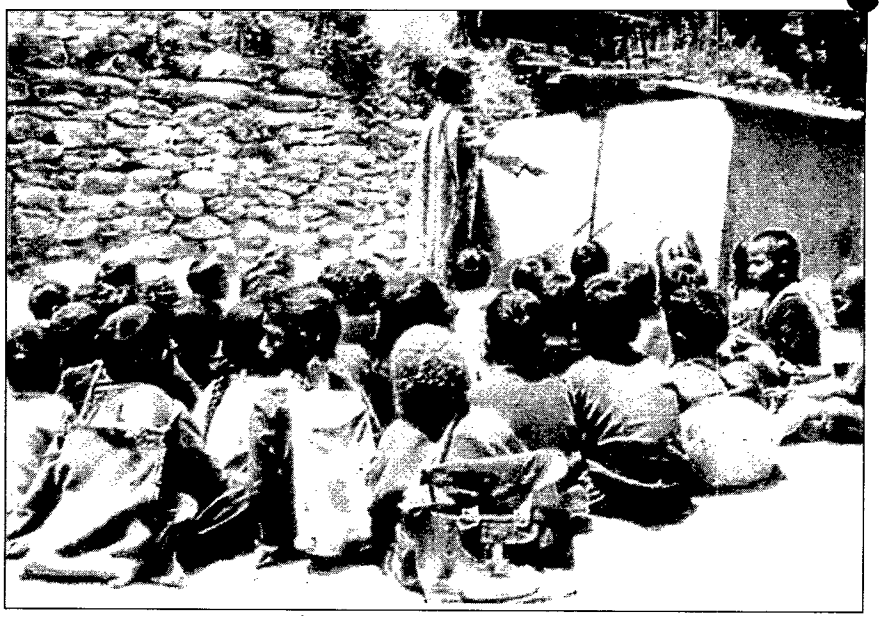
A NEWS item in one of the National newspapers has generated heat among social activists, jurists and intellectuals. The National daily highlighted the sufferings of the women of the Lambada tribe in Telangana region of Andhra Pradesh who had given birth to girl children that were either sold or killed. The news item alleged 'poverty and illiteracy' as the key reasons that forced them (the Lambada tribals) to sell their children. The NHRC took cognizance of the news and called for information on the issues relating to foeticide, infanticide, adoption and sale of children. The Lambadas, Banjaras and Sugalis are the better known tribes of Andhra Pradesh that come from the same racial group. Apart from Andhra Pradesh, Lambadas are found at several other parts of India as they keep migrating to various parts of the country. These tribes, conspicuously, live in groups. The Lambadas are a semi-nomadic tribe generally regarded as an itelligent, strong and sturdy group. But they have had a large share of troubles especially during the journeys from their original habitats. Most of them are agriculturists.

Although it is difficult to translate the exact meaning of the word "Lambada", it generally means people living away from the society, the accepted forms of civilization, yet with a bonding to protect themselves from enemies. Sometimes, they are linked to trading of salt also. The Lambadas speak a dialect known as "Lambadi" (also known as Lambani, Lamani, Lamadi, Labhani, Lemadi, Banjara, Banjari, Banjori, Goola, Wanji, Gormoti, Singali, Sugali, Sukoti etc.) which is quite different from Telugu, Kannada and Marathi. It is pre dominantly influenced by Marwari of Rajasthan and has Gujarati influence. Thus, they form a linguistic minority group without a script of their own.

Lambadas are, generally, a very hard working people through unorganised. They are physically strong and well-built, brave and industrious. The Lambada women are very good-looking. This has, often, led to sexual exploitation. Besides agriculture, they depend on sheep and goat-farming for livelihood. They collect firewood and other minor forest produce from the jungles and sell them in the towns and villages. It is said that in older days, they worked as carriers, transporting

Mr A. V. Singh is Director, Ministry of Labour.

goods and merchandise on bullocks. But, with the introduction of various faster means of transportation, they have now taken to cultivation. The oppression of this tribe can be traced to the end of the nomadic period when some of the ruling classes began to loot the precious possessions of the Lambadas indicriminately. Further, upon finding the charming looks of the Lambada women, the bandits of the ruling class began to kidnap Lambada women to satisfy their lust and base desires. This upset the Lambadas to no end. They began to migrate to several parts of the country in order to protect themselves from the attrocities of the ruling class. Interestingly, they chose some of the interior forests to ward off any danger or threat of their community.



Since poverty and illiteracy have been identified as the main reasons for their exploitation and backwardness, the district administration of Medak decided to formulate a policy to impart education to their children. The people of Lambada tribe used to migrate during the months of October to March from their native places in search of livelihood for six months. Their migration is generally for harvesting and other agricultural activities in the neighbouring areas. Normally, Lambadas do not live in villages; they settle down in groups away from the villages. Their settlement is known as 'Thanda'. Leaving behind a few members of the community, most of them migrate to the places where sowing and harvesting are to be done. Children also accompany. Lambadas remain in their 'Thandas' usually, only for six months.

As the family migrates in search of livelihood, Lambada child also migrates with the parents. Children are invariably made to work and they miss the opportunity for schooling. The children are not permitted to work independently. By force of circumstances, they have to move with their parents to assist them. While working along with their parents, the children earn extra money to support the family. Even if the children are not working, they are expected to assist their family by way of looking after their younger siblings, cooking for the family, fetching water, washing clothes etc. This keeps them away from the schools. This lack of education and social development keep them poor for ever. Considering the special features of their migration, a distinct action plan had to be developed by the District Collector of Medak to educate the children and to enlighten their parents. The programme objectives are the following:

- To arrest the need for migration, especially for the Lambada children;
- To enlighten the Lambada parents to come forward to facilitate the education of their children.
- Organising day and night schools for children;
- Teachers' training on child focused learning methodologies;
- Campaigns on issues such as child labour, female infanticide and child trafficking to create awareness in the society.
- Health consciousness campaigns in collaboration with NGos/VOs;
- Organising women in self-help groups;
- Training women to undertake better income generation activities;
- Innovative pilot projects to undertake sustainable land development.

Although the parents are interested in sending their children to school, poor economic conditions and way of life force them to discontinue their education. The school going children are urged by most of the parents to assist in work. This leads to interruption and poor performance in studies and the students are detained in the same class because of absence and inadequate learning. Eventually, they become drop-outs.

At the behest of the district administration, an action plan was drawn up. The youth of the community and area were encouraged to take

charge of the mammoth task of motivating the parents to leave behind their children in their 'Thandas' for education when they move out. The District Collector of Medak who is the Chairman of the NCLP, visited the 'Thandas' several times in the Lambada-concentration areas for motivation. In addition to the two government schools, it was decided to start three NCLP schools in the areas.

The leading NGO of the region, Sadhana, took up the mission for imparting training among the youth of the areas (western Medak) to teach children through play-way system of teaching. In the beginning, youth were trained to teach and to take care of the children in appropriate ways. These youth were named as *Mobilisers*. Thus, in Manur mandal of Narayanakhed constituency, three NCLP schools opened with the help of Ministry of Labour, started imparting education to the Lambada children. Many of them successfully mobilised parents to leave behind their children for getting education through these special schools when they are away from their 'thandas'. Many Lambadas agreed to join this new stream and agreed to migrate in search of their livelihood leaving behind their children. Nearly 450 children are getting elementary education through these NCLPs. About 100 girls of Erakpalli, Shyamnayak and Kishanriyan 'thandas' have joined these special schools with the consent of their parents. Several youth including women came forward for mobilising people as well as children to enroll in the NCLP and state government run schools. The women are not only working as teachers but also nursing children like their mother. Children of NCLPs are provided mid-day meal (which is an ingredient of the scheme) and breakfast and dinner. The expenditure incurred on food was met with the monetary assistance given to them under DPEP scheme.

The elders of Lambada community who had preferred to stay back in their 'thandas', agreed to render assistance and to mobilise resource for the smooth running of NCLPs. In cases of emergency, some of the elderly people of Lambada community were always available in their 'thandas' and were ready to bail them out from difficulties. This reminds one of 'Gram Vridhas' (village elders), who used to play a pivotal role in village administration during Mauryan period. Arranging water for cooking food is one of the major problems being faced by the mobilisers. Some of them who are working as teachers in NCLP schools, water from a distance of more than a kilometer on bicycles with great difficulty. They have requested the district administration to explore the possibility for sinking a tubewell in the area so that children may be given potable water during any time. The general attitude of the people is not to withdraw their children from the schools. In case parents wanted to take home their children, they were allowed to take their children for one day only so that their educational curriculum was not jeopardized. In the case of girl child, either of the parents visits the school for 15-20 days and spends a few hours or a day with their children. What was more encouraging was that all the children were found very energetic and they wanted to study and spend more and more time in NCLP schools. The faith of the parents in the teachers and the children's enthusiasm have created a new awareness and expectation. To attract more and more children in this developmental work, it has been decided to open three more NCLPs in this area. With easy accessibility, each and every child may be given basic education. With that majority of the community, unfortunately being considered as lumpen proletariat, may become proud and responsible citizens of India. The beaming faces, twinkling eyes and chuckle of delight, showed a lot which could not have been conveyed, even with chosen words. Sometimes, seeing is more eloquent than words.

This is the harbinger of an evolution, a dawn of new hopes and aspirations. Here is an awakening and an advance to a vision—a dream come true. ❑

LETTERS

Sir,

The article published in Yojana (September, 04) titled "Defining Success" by Subroti Bagchi is very inspiring for the youth. I expect more articles like this in future. Thanks for publishing such articles in Yojana.

Pradeep Doddawad
Karnataka

Sir,

I am happy to read the articles on Independence Day and also on Olympics Special. Mr. Bhardwaj has given an informative article on Olympics. "Let the noble thoughts come to us from every side." The worthy information is now flowing and is infinite.

Ganesh AP
Karnataka

Tackling Biomedical Waste



TITLE	:	**BIOMEDICAL WASTE MANAGEMENT IN INDIA**
AUTHOR	:	**DR J. KISHORE AND DR G.K. INGLE**
PUBLISHER	:	**CENTURY PUBLICATIONS, 46 MASIH GARH, JAMIA NAGAR, NEW DELHI-110025**
PRICE	:	**Rs 140**
PAGES	:	**144**

THIS BOOK deals with the issue of managing biomedical waste in the country. The subject is a matter of concern to hospitals, nursing homes, agencies enforcing environmental laws and the public in general. The wastage from biomedical source accounts for upto 2 per cent of the total municipal solid wastes.

Untreated biomedical wastes are a serious health hazard. These can cause needle prick injuries, HIV/ AIDS and Hepatitis B and C. Indiscriminate disposal of hospital needles and Surgical waste increases the chances of injuries among waste handlers and patients.

Biomedical waste are often disposed of illegally into the garbage heaps and sewers. Used syringes with or without blood and needles, used intravenous bottles, tubes, soiled cotton, medicine vials, urine bags and contaminated mattresses are all picked up by rag pickers and junk dealers who recycle the stuff for sale, probably unaware of the consequences to the users.

The book defines and classifies biomedical waste at length. It says biomedical waste is the waste generated in the diagnosis, treatment or immunization of human beings or animals in research or in the production of testing of biological projects. These include all categories of infected and toxic waste that is a potential threat to human beings and environment.

Animal waste means discarded materials like carcasses, body organs, body fluids, blood or bleeding originating from animals known to be contaminated with infections agents.

The chemical wastes include discarded solid, liquid and gaseous chemicals from diagnostic procedures. These may be toxic, corrosive and inflammable, contaminated wastes are those which carry invisible micro-organisms that cause diseases. These can live on the skin surface for some time and harm the body once they get inside it through the month. The liquid waste includes liquid effluents generated from laboratory and washing and disinfecting activities in health care settings.

All biological wastes are harmful. They befoul the environment and the water table unless treated before disposal. This is the crux of the book. It will interest the specialists of the subject.

S. M. Kumar

A Film Star Speaks



Nirupa Roy

"The world has changed much since my first role"

Nirupa Roy passed away recently at the age of 73. Born on January 4, 1931, in Valsad, Gujarat, she became the favourite "Maa of Bollywood."

Nirupa Roy contributed this write-up in the April 7, 1957 issue of Yojana.

I JOINED the films a little more than 10 years ago. At that time I was shy young Gujarati girl who was quite overawed by her surroundings. I shall never forget the first role I played with so much reluctance and hesitancy. My uncertainty at the time was due partly to the fact that I was completely inexperienced and partly to the existing social environment.

Now, of course, things are totally different. In these 10 years the world and our own country with it have progressed with enormous speed. At any rate, the relationship between Indian society and the world of films has been completely revolutionised.

I had the rare fortune of visiting U.S.S.R. in 1954 as a member of the Indian Film Delegation with artists like Nargis, Raj Kapoor and others. The tour was of great benefit to us and broadened our experience very considerably. But, at the same time, I feel that we also were able, in our own humble way, to impart some inspiration to the Russian artists we met.

It is a significant fact that the Government has not neglected the film industry. This is particularly remarkable in view of the fact that the Government has many varied and difficult problems which need immediate solution. In recent years it has become increasingly clear that the views of the film stars are valued and their help and cooperation sought every now and then in the country's many cultural projects. This would have been impossible ten years ago.

The country's trust and faith in the film industry naturally imposes great obligations on workers in all aspects of the film industry. In India today a film star cannot afford to forget that he or she is a custodian of the culture of India. Spectacular success or the desire for money should not make them forget and shirk their responsibility. Modern society in India has been paying great and sincere tributes to Indian film stars and the film stars in their turn are bound to repay this trust by playing their roles in a responsible manner with a view to enriching our society in some way.

I feel that Indian films can rightfully claim credit for producing films which can hold their own anywhere in the world for quality. Among these are, in my opinion, 'Ratnadeep', 'Do Bigha Zamin' and 'Jagriti'. The educational and cultural value of such productions is unquestionable and I am confident that in the future our film stars will willingly play their modest role in India's future development. ❑

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IAS/PCS MAINS-CUM-PT-2005

Success may come under cloud if General Studies is neglected. This has been exemplified by the result of Mains-2003. These results have made it essential to formulate an altogether new strategy for G.S. Certainly, G.S. has gained much ground as compared to optionals. In this backdrop, the rational and result-oriented strategy of *DISCOVERY* may prove to be the real guide .....

GENERAL STUDIES

By: C.B.P. Srivastava & Others

The success of the classes conducted under the guidance of **C.B.P. SRIVASTAVA** in **DISCOVERY** was exemplified in **Mains-2003** questions. Likewise, questions asked in **Mains-2004** again have secured success. The following questions were included in detailed explanation, answer format within word limit and in the list of guess questions. A striking feature of the class has been that answers of long, short and **20 word** questions were found in the class notes. This proves that, in **DISCOVERY** classes are being conducted as per the demand of the questions and trends of questions asked in Civil Services. This will ensure your success also.

1st Paper 1. b, 2. a, b, 4. c, 5. a, c, d, 6. a, b, 7. a, 8. a, b, 9. a, c, d, e, 10. a, 11. b, c, 12. b, 13. a, b, c.

2nd Paper 1. a, b, c, 2. a, b, c, d, 3. a, d, 4. a, b, 5. a, b, c, 6. a, b, c, d, f, g, h, j, k, l, m, n, o, 7. b, c,. 8. d, 9. a, d, e, 10. a, b, 11. b, c, 12. a, b, c (i, iv), e

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