The Journal of Governance

Volume 15 July 2017

IC Centre for Governance
NEW DELHI

The Journal of Governance
IC Centre for Governance
3, Palam Marg, 3rd Floor, Vasant Vihar, New Delhi-110057

The IC Centre for Governance has been set up in with the objective of collective thinking and acting on important issues of governance. It believes that public governance is too serious a matter to be left entirely to the state and that the involvement of the Civil Society is not only desirable but also essential. The Centre seeks to strengthen the capacity of Civil Society and government for ensuring good governance.

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The Journal of Governance is printed and published by Mahesh Kapoor on behalf of the IC Centre for Governance, New Delhi-100057

Publication Coordinator - Nandita Sinha

Printed at Rakmo Press Pvt. Ltd. C-59, Okhla Industrial Area, Phase I, New Delhi-110020

This issue has been sponsored by SCP Memorial Educational Trust

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The recent election results suggest that voters are lowering tolerance for policy makers with stale or weak ambition and want newer, bolder and inspiring policy goals.

-Manish Sabharwal

A midterm evaluation of any democratically elected government usually evokes conflicting and contradictory assessments. The Modi government at the end of three years of its tenure is no exception. Senior commentators from the left leaning economists and self-styled liberal-secular intellectuals are uniformly dismissive of the policies and programmes of the new government. "We have the most anti-intellectual government in the world", says an opposition leader adding that "the economy is in a clear declining trend". They are of the view that the country has seen three years of broken promises, nonperformance and betrayal of people's mandate. They accuse the Modi government of failing miserably in providing jobs to youth and of not reviving investments and bank credit.

On the contrary, the broadsheet of the last three years draws eulogistic reports from those commentators who subscribe to the right wing economics and ideology. According to them, the third generation of structural reforms is dramatically transforming the economy and providing much needed social security to the poor. They quote the end of discretionary allocation of public resources; changes in fiscal and monetary policies, direct benefit transfer etc. and see a new India emerge from the debris of the old.

The reality, in our view, lies somewhere in between the two viewpoints. As we see, a quick succession of ambitious programmes has embarked upon the 'maximum governance' initiative of the NDA government. However, how these programmes are pursued with 'minimum' government' is to be seen in the remaining part of its tenure.

It is some achievement in three years – to rid the policy making structure and process in government of corruption by bringing transparency in matters pertaining to environment, spectrum, coal and FM etc, stopping the bleeding of public sector banks, reaching out to the unprivileged by direct benefit transfer, commencing a movement on ease of doing business, initiation of MUDRA yojana and skill development programme; but frankly speaking, we expected better from Modi.

Swachh Bharat, Digital India, Skill India, Make in India, Start Up India and Stand Up India came in quick succession followed by demonetisation of old currency notes and heralding Goods and Services Tax. This was a cumulative unfolding of the Prime Minister's dream of a 'Shreshtha Bharat'. We expected the dream to become the dream of a billion countrymen and women. But it appears that many in government do not seem to share his dream. The dream largely remains the dream of one person.

For instance, we expected some movement towards a progressive education policy. We know that the country today is at great risk because of defective delivery of education to the new generation. The government made motions for formulating policies for primary, secondary and higher education by inviting comments from the public on detailed questionnaires. Committees were constituted for various institutions and functions, but no tangible outcome is in sight. Soon the country will be in the election mode and controversy generating education policy will be put on the back burner.

On the job front too, we expected a faster movement after MUDRA yojana was initiated. While micro financing was made available to crores of micro entrepreneurs in the last two years, there has not been any monitoring of the actual utilization of the MUDRA loans. Since the impact of MUDRA has not been captured by the Labour statistics till now, there is no clarity whether the money provided for setting up tiny enterprises has actually been used for generating employment opportunities. Also, there has not been an attempt to link skill development with MUDRA beneficiaries to make the resulting enterprises more viable.

We expected credible movement on administrative reforms too.

The Prime Minister spoke of better management of civil services in his address on successive Civil Service Days. However, the recommendations of the Administrative Reforms Commission are still gathering dust in the government.

It appears that in his impatience to introduce big ticket programmes, the PM has inadvertently (or maybe as a part of well thought out strategy) not made any significant move towards administrative reforms. The recommendations of ARC and sundry other committees are languishing. Perhaps he wants to wait till his next term to deal with slow yielding policy measures. Civil service reforms are by nature disruptive and take years to settle down and show positive results unlike economic reforms.

The net outcome of three years of the new administration is that we have moved from a mindset of incremental development towards a breakaway policy making process. Modi has told us that reforms should not merely tinker with things, they should result in transformation.

The crux, however, lies in operationalisation. It has to be ensured that the Mudra loans are actually deployed for setting up or expanding tiny businesses and not for meeting consumption expenditure. It has to be ensured that skill development does not lead to unscrupulous training institutions posting fake numbers of skilled persons. Therein lies the relevance of administrative and civil service reforms.

Prabhat Kumar

E. J. James and Thomas J. Menachery

Capacity Building For Sustainable Water Resources

INTRODUCTION

Sustainable Development

Capacity building has gained considerable importance and also attained new dimensions and dynamism in the context of sustainable development. Several discussions and debates took place on the theme 'development versus environment' since the Stockholm Conference in 1972, in which the then Prime Minister of India made a thought-provoking talk on 'Man and Environment'. The World Conservation Strategy (WCS), brought out by UNEP, WWF and IUCN, acknowledged that 'development and conservation are equally necessary for our survival' (IUCN et al., 1980). The strategies outlined by WCS include: (i) the maintenance of essential ecological processes within 'life support ecosystems' such as agricultural land and soil, forests, and water bodies; (ii) the preservation of genetic diversity; and (iii) the promotion of sustainable utilization of species and ecosystems. Since then, there is a general realization that the environment and development are two sides of the same coin. Towing in the same line, the World Commission on Environment and Development (UN, 1983) in 'Our Common Future' defined sustainable development as the "development that meets the needs of present generation without compromising the future generations to meet their own needs."

The Commission focused on three pillars of human well-being: economic, socio-political and ecological/environmental conditions. The basic concept underlines strong measures to spur economic and social development, particularly for people in developing countries,

while ensuring that environmental integrity is sustained for future generations. There has been an emphasis on the 'ecosystem' or 'holistic' approach for attaining sustainable development of natural resources (CBD, 2014). Though there have been several theoretical works available on ecosystem approach, there are only limited practical lessons and best practices to share the success stories of ecosystem approach. This is mainly because of the limitations in understanding and appreciating the integration of the complex web of elements and processes in nature and still complex web of human needs and values. In this context, capacity building in the area of natural resources management, keeping in view the sustainability considerations, gains importance.

The four factors to be considered in the context of sustainable development of natural resources pertain to: economic, social, environmental and institutional aspects (Figure 1). The capacity building attempts are expected to address all these factors in an integrated manner to achieve sustainable development.

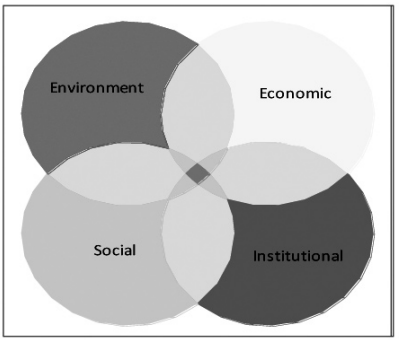

Figure 1 Factors influencing sustainable development

Integrated Water Resources Management

Integrated Water Resources Management (IWRM) may be conceptualized as a systematic process for sustainable development, allocation and monitoring of water resource use considering social, economic, environmental and institutional objectives. The key principles of IWRM evolved at the Dublin Conference (Young et al., 1994; ASCE/UNESCO, 1998) are:

1. Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment;
2. Water development and management should be based on a participatory approach, involving users, planners and policy-makers;
3. Women play a central role in the provision, management and safeguarding of water; and
4. Water has an economic value in all its competing uses and should be recognized as an economic good.

These principles were reflected in Chapter 18 of Agenda 21 of Rio Conference, which gives a high priority to the 'protection of water resources from depletion, pollution, and degradation' (UN, 1992). The statements reflect the growing recognition that freshwater is becoming scarce and that neglect of pollution control threatens the sustainability of future resources.

Though all the principles of IWRM are relevant in the context of sustainable development of other natural resources also, water is a common link in the sustainable development of all these resources. All the more, the food security, health security, energy security and ultimately economic and social security depend on water security to a great extent. The key issues to be analyzed in the context of water security are: (i) growing water crisis and the need for urgent action; (ii) water governance crisis and associated factors; (iii) securing water for people; (iv) securing water for food; (v) gender disparities in the sector; and (vi) protection of vital ecosystems. These key issues bring to light the great importance of capacity building for implementing IWRM.

GLOBAL WATER ISSUES AND DEVELOPMENT GOALS

Water Crisis

The importance of capacity building in the water sector gained momentum in the context of present water crisis, water governance problems and with the recognition that IWRM may be a solution to the water crisis. The involvement of various international and national

agencies in the water and sanitation sector called for massive capacity building activities. For the achievement of Millennium Development Goals (MDG), the necessity for a renewed vigour in the area of capacity building was felt.

The great concern for water arose from the realization that over 1.7 billion people are living in river basins where water use exceeds recharge, leading to drying up of rivers, depletion of groundwater and the degradation of ecosystems and the services they provide. In spite of the fact that freshwater is a finite resource, in absolute terms there is no shortage for it world-wide. The total usable freshwater supply for ecosystems and humans is only about 200,000 km^3 – less than one percent (<1%) of all freshwater sources. It is disturbing to note that water use has been growing at more than twice the rate of population increase in the past century (UN-Water, 2015). The water withdrawals are predicted to increase by 50 and 18 percent by 2025 in the developing and developed countries respectively. By 2025, 800 million people will be living in countries or regions with absolute water scarcity, and two-thirds of the world population could be under stress conditions. Not only human beings but also nature shares these threats. Human water management strategies can be detrimental to wildlife, such as migrating fish as experienced after the construction of the Farakka barrage in the Ganges and the Ithai barrage downstream of Loktak lake in Manipur. The levels of threat in regions with intensive agriculture and dense population, such as the US and Europe, are high. It is estimated that during 2010-2015, approximately USD 800 billion will be required to cover the annual global investment in water infrastructure.

Wise use of water resources has to take care of biodiversity conservation together with human water security. For example, preserving flood plains rather than constructing flood-control reservoirs would provide a cost-effective way to control floods while protecting the biodiversity and wildlife in such areas. Based on the map published by the Consultative Group on International Agricultural Research (Smakhtin et al., 2004), the countries and regions mostly suffering from water stress are North Africa, the Middle East, India, Central Asia, China, Chile, South Africa and Australia. Water scarcity is on the increase in South Asia. More than 50 countries on

five continents are said to be at risk of conflict over water. One such conspicuous case is the Southeastern Anatolia Project in Turkey in the Euphrates, which is expected to have serious consequences on the water supply schemes in Syria and Iraq. There are also several provincial conflicts reported from Australia, India, the US and the UK. The economic loss from the inadequate delivery of water and sanitation was estimated at 1.5 % of the gross domestic product of the countries included in a study on the progress in meeting the MDGs by WHO (2012). According to some estimates, over 80% of wastewater is discharged without treatment. Water related disasters are by far the most destructive of all natural disasters and have considerable social and economic consequences. Since the Rio Earth Summit in 1992, certain estimates show that floods, droughts and storms have affected 4.2 billion people (95% of all people affected by disasters) and caused USD 1.3 trillion of damage (63% of all damages) (UNESCO, 2009).

Millennium Development Goals and Future Challenges

The MDGs, formulated in 2000, focus on bringing down the proportion of people without sustainable access to safe drinking water and basic sanitation facilities to half by 2015 considering the base year as 1990. The Rio+20 Conference in 2012 gave an opportunity to reflect on the progress towards sustainable development over the previous 20 years. One of its main outcomes was an agreement to launch a process to develop a set of Sustainable Development Goals (SDGs), which build on the MDGs and converge with the post-2015 development agenda. The overarching agenda of the UN for 'securing water for all' envisioned: healthy people through universal access to safe drinking water, sanitation and hygiene, improving water quality and raising service standards; increased prosperity through sustainable use and development of water resources, increasing and sharing the available benefits; equitable societies through robust and effective water governance with more effective institutions and administrative systems; improved water quality and wastewater management taking into account the environmental limits; resilient communities through reduced risk of water related disasters to protect vulnerable groups and minimize economic losses (Figure 2).

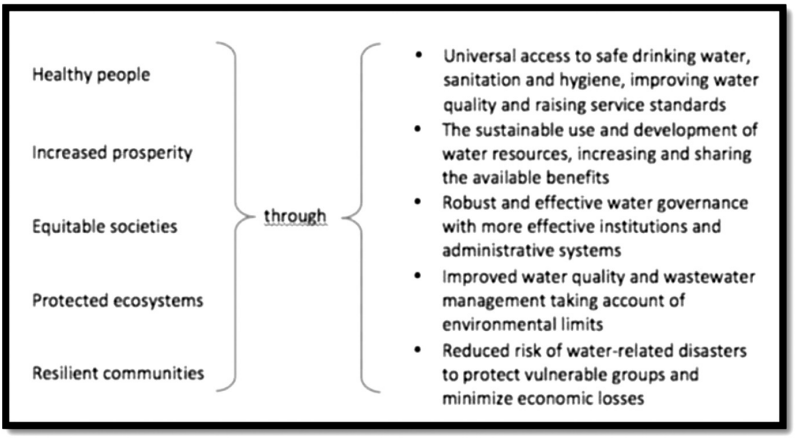

Figure 2 Overarching goal of 'securing sustainable water for all' according to UN-Water

Man depends on access to water in the landscape for several parallel functions. These include human and community health and well-being; biomass production; other forms of socio-economic production; the maintenance of habitats for ecological protection; and the transport of soluble and solid materials such as nutrients, pollutants and sediments. The water passing through a landscape is influenced by human activities in that landscape, and may therefore present problems which must be anticipated and met by mitigating measures (FAO, 1993). A sectoral picture was becoming clearer considering the different uses and stakeholders of water. Agriculture is by far the greatest consumer of water globally, accounting for 70% of water withdrawals worldwide, although this figure varies considerably across countries. Rain-fed agriculture is the predominant agricultural production system around the world, and its current productivity is, on an average, little more than half the potential obtainable under optimal agricultural management.

By 2050, world agriculture will need to produce 60% more food globally, and 100% more in developing countries. Industry and energy together account for 20% of water demand. More developed countries have a much larger proportion of freshwater withdrawals for industry than less developed countries, where agriculture dominates. Balancing

the requirements of sustainability against the conventional view of industrial mass production poses several challenges to the industry. One of the challenges pertains to globalization, the concern being how to share the benefits of industrialization worldwide without adverse impact on water and other natural resources. Domestic sector accounts for 10% of total water use. And yet, worldwide, an estimated 748 million people remain without access to an improved source of water and 2.5 billion remain without access to improved sanitation. More than half the world already lives in urban areas and by 2050, it is expected that more than two-thirds of the global population of 9 billion will be living in cities. Furthermore, most of this growth will happen in developing countries, which are not equipped to face this rapid change.

The growth of cities is likely to enhance the number of people living in slums, which often have very poor living conditions, including inadequate water and sanitation facilities. Therefore, the development of water resources for economic growth, social equity and environmental sustainability will be closely related to sustainable development of cities. In the context of ecosystems, the most important challenge to sustainable development in the past decades is the unfolding global ecological crisis that is becoming a barrier to further human development. From an ecological perspective, the sustainable development efforts have not been successful. It is feared that there has been a worldwide environmental degradation and some of the major ecosystems are approaching thresholds as a prelude to total collapse. There has been a growing understanding on the global planetary boundaries, which must be respected to protect Earth's life support systems (Will Steffen et al., 2015). The new global vigour for capacity building in the context of IWRM has to be viewed in this background.

WATER MANAGEMENT ISSUES IN INDIA IN THE CONTEXT OF CAPACITY BUILDING

Backdrop

The importance of capacity building in the water sector in the country can be better appreciated by realizing the major water issues in India

and the challenges to resolve these issues. Capacity building is one of the major challenges in this context and the strategies for capacity development have to consider the national, state and local level conditions and the experiences gained by India and other countries, particularly by other developing countries.

The major challenges to the water management in India are the spatial and temporal variation in water availability, growing population, booming economy and subsequent changes in water use pattern, hurdles to build water partnerships and the tendency to continue the age-old practice of the government departments to be the provider and not the facilitator. Many changes have not taken place with time in the government departments and organizations with regard to organizational structure and procedural mechanisms. The period of large-scale infrastructure development in the water sector of the country after Independence was followed by the period of comparatively less efficient operation and maintenance of these facilities. Paucity of funds is often experienced to maintain the existing systems and to enhance their potential. The government with its tax revenues and water cess may find it extremely difficult to manage the systems without the support of the stakeholders and private sector. Instead of the role of provider, government may have to take up the role of a watchdog and facilitator. The slow pace in the water resources development sector has its impact on the economy of the country and the welfare of the people. Some of the failures of government departments made the communities to go for their own alternatives, which were not often scientifically planned or implemented.

There has also been a reluctance to build up on the lessons learnt from the past or from the experiences of other countries involved in solving similar problems. The climate variability already experienced and the predicted levels of climate change are posing threats to some of the regions in the country which are already prone to floods and droughts. The strengths of the country, namely the community, private sector and innovative attitude were not made use of in the water sector to the extent possible. All these call for a different strategy to achieve sustainable development of water resources. The

IWRM is the appropriate solution in the context of India, provided required capacity is built at all levels and in all sectors related to water management.

Water Potential and Utilization

The estimates show that India receives an average annual precipitation of 4000 BMC, including snowfall. The average annual water potential of the rivers of the country is 1869 BMC. It is estimated that the total utilizable surface and ground water potential is 690 BMC and 432 BMC respectively, adding up to 1122 BMC (CWC, 2003; 2004). The monsoon rainfall in India is highly seasonal and 50% of this is received in just 15 days; 90% of the rivers are seasonal and flow only for around 4 months (World Bank, 2005).

The per capita water consumption is projected to increase from 85 lpcd to 125 and 170 lpcd in 2025 and 2050 respectively. There are several urban and rural pockets in India where people are not having access to potable water. The present water demand for domestic purpose is estimated to be 42 BMC, which is expected go up to 107 BMC in 2050. According to certain official estimates, water supply and sanitation coverage is 89% and 34% respectively (CWC, 2003; 2004). An estimate made by the National Commission on Integrated Water Resources Development (NCIWRD, 1999) has projected the industrial water demand to 30, 101 and 151 BMC in 2000, 2025 and 2050 respectively. The data on water is often available at the national, state or district levels and not at a river basin or small watershed level for the purposes of planning and implementation of projects.

There have been several attempts to construct large-scale water storage structures especially after the Independence to help the agrarian community and also to increase food production. The live storage capacity of the country is estimated at 418.05 BMC and the capacity of completed, under-construction and under-consideration projects are 220.76, 84.32 and 112.97 BMC respectively (CWC, 2003; 2004). All these considerably helped in the Green Revolution, which transformed India from a country with food grain deficit to one with food surplus. But, most of these projects were not properly operated and maintained and therefore call for large investments to make

them functional in future. It is often said that there is a tendency to "build-neglect-rebuild".

The irrigation potential at the time of Independence was 22.6 Mha. The ultimate irrigation potential of the country is 114 Mha of which 109 Mha has been already created and 85 Mha utilized. Around 240 projects are included in the Command Area Development Programme with a culturable command area of 23 Mha and total irrigation potential of 22 Mha (CWC, 2004; 2004). Gross and net area irrigated as per the statistics of 2000 has been 76 Mha and 57 Mha respectively. Certain arid zones prospered and recorded high economic growth. It is observed that poverty in irrigated districts is one-third that of un-irrigated districts. The first Prime Minister of India rightly called *dams* as 'temples of modern India'. The agriculture sector faces threats due to population growth, fragmentation of land holdings, depletion of natural resources, conflict of interests and above all climate variation which is a prelude to a much-feared climate change.

The report of World Bank (2005) highlights that while industrialized countries harness 80% of their economically viable hydro-power potential, India has utilized only 20%, despite its large potential in the Himalayan region and increasing need for power. At present, only 17% of electricity generation is met by hydro, though it is comparatively environment-friendly.

The quality and quantity of water for the aquatic ecosystems are at a low level. This has led to more demand for the purposes of environment and ecosystem management. Certain estimates show that the minimum flow requirement of 12-30% of the mean annual runoff is needed for this purpose; one estimate shows 46% for the Brahmaputra basin and another estimate shows 7% for the Mahi basin.

The problems with regard to water availability is expected to increase due to global climate change, especially in the Indo-Gangetic plain due to glacial melting, fluctuations in the rainfall pattern in the interior parts of the sub-continent and sea level rise in the coastal belt/ecosystems. The water managers have to be prepared to face these challenges from now on, and planning has to consider this

additional constraint.

It may be observed that rich countries with the arid pockets like the US and Australia have stored 5000 cubic meters per capita, while developing countries like China, South Africa and Mexico have storage capacities of 1000 cubic meters per capita. India's water storage capacity is only 200 cubic meters per person, which according to World Bank (2005, 2006) is only 30 days of rainfall, compared to 900 days in the major river basins of developed countries in the arid zone.

Water Quality and Sanitation Issues

The thickly populated belts in India, and some of the states as a whole are facing considerable water quality problems, caused by discharges of untreated human waste. It is also to be noted that chemical contaminants like fluoride, arsenic and selenium cause very serious health problems in the country. An estimate shows that 70 million people in 20 states are at risk due to excess fluoride and around 10 million people are affected by arsenic in groundwater (James, 2014). The increase in concentration levels of chloride, TDS, nitrate and iron in groundwater are threats to sustainable drinking water supply. The coastal belts are affected by salinity and the problem increases by over-exploitation. The industrial effluents discharged without treatment to the natural water bodies and the indiscriminate uses of agro-chemicals are significant threats to the aquatic ecosystems. One of the studies of World Bank (1995) point out that the total costs of environmental damage in India is of the order of Rs. 45000 crores per year, which works out to 4.5 % of the GDP. Further, 59% of this is the result of health impacts due to water pollution (World Bank, 2005).

The sanitation scenario of the country is very poor and it has been already recognized and is being addressed through Swachh Bharath. Sixty per cent of Class-I cities and 80% of small urban centers do not have sewerage systems. The total wastewater generated in 300 Class-I cities is about 15800 MLD and the treatment capacity is available only for 3750 MLD (CPCB,1989; Arghyam, 2007). The metro cities of the country hardly have capacities to treat 30% of its sewerage

and most of these cities have only facilities for primary treatment. Therefore, all the untreated and partially treated municipal wastewater joins the freshwater sources, causing severe pollution.

Consequences Faced

India looked at water management as an engineering challenge in the initial phases after the Independence. There was practically no incentive, entitlements, and participation of stakeholders. There was also no competition, no part for private sector, no accountability, and pricing did not exist in some areas. All these led to some people taking care of their own needs for water in their own ways. For example, people went in for large scale exploitation of groundwater through bore wells and tube wells, without knowing the consequences of such measures. There are more than 20 million tube wells in the country today, most of them dug by individuals as stand-alone systems to achieve self-sufficiency in water supply. More than 50% of irrigation in the country is from groundwater sources. Almost 15% of the aquifers are in a critical condition. On the other hand, the urban middle class went in for purchasing bottles and barrels of water from the market to meet their day-to-day requirements. The estimates show that 80% of water for domestic purpose comes from the groundwater sources. There is still another community of poor in the urban areas which gets their supply of water from the vendors at high costs; these vendors considerably exploit groundwater sources. The industries on their turn went in for captive alternatives. These were costly and at times at the cost of the neighbourhood. All these illustrate the present state of water management in the country, which will finally lead to conditions which are not at all sustainable.

Major symptoms of water shortage are evidenced from the water conflicts among different geographical and administrative units and different stakeholders themselves. The inter-state water disputes are on the increase. The tribunals take considerable time and the procedures cost large amount of money till the final award comes out, which often does not satisfy the stakeholder states. The Krishna and Cauvery disputes are some examples of inter-state water conflicts. There is very often a tendency to go for short term measures

without understanding the actual causes and long-lasting solutions which are sustainable. It is in this background that we have to look at the possibilities of introducing sustainable development of water resources by empowering the systems and enabling the stakeholders involved in the water sector. The capacity building in the water sector of India should address the local issues from an overarching national perspective and not based on the perspectives of the funding agencies either from India or abroad.

CAPACITY BUILDING: CONCEPT, DIMENSIONS, STRATEGIES AND EVALUATION TECHNIQUES

Definition and Concept

Since the early 1970s, the United Nations Development Programme (UNDP) was involved in preparing guidelines for 'institutional building' and this initiative can be rightly called as the fore-runner of the present concept of capacity building or capacity development. The UNISDR (2009) defines capacity development as 'the process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic goals, including through improvement of knowledge, skills, systems, and institutions'. In 1990, the term 'community capacity building' gained popularity. The UNESCO (2006) defined capacity building/development as 'the organizational and technical abilities, relationships and values that enable countries, organizations, groups, and individuals at any level of society to carry out functions and achieve their development objectives over time'. Capacity refers not only to skills and knowledge but also to relationships, values and attitudes, and many other factors (Morgan et al., 2005). However, one of the definitions given by the World Bank (2005) in the context of African region takes into account the essentials of capacity building: 'the proven ability of key actors in a society to achieve socio-economic goals on their own'. Kaplan (2000), a well-known NGO scholar listed the different components of organizational capacity building, as developing a conceptual framework, establishing an organizational attitude, developing a vision and strategy, developing an organizational structure, and acquiring skills and resources.

'Capacity building' is often misconceived as merely the building of local skills and abilities. The term is over-used in recent times to the point where it has lost most of its meaning. In the context of water supply and sanitation at local level, capacity building is defined as "the process whereby a community equips itself to undertake the necessary functions of governance and service provision in a sustainable fashion" (UNDP,1996) . The process of capacity building must be aimed at both increasing access to resources and to changing the power relationships between parties involved. The community may be a local government, a village level committee or even a tribal hamlet.

Capacity building often focuses on a single-role player/organization in a sector without considering the overall context or system within which the organization operates. Therefore, there is a need to properly interpret the term 'capacity'. Morgan et al. (2005) recognized that the individuals are primary building blocks which make the organization to perform when their capacities and competencies are synthesized and synergized within their organizations. But, the organization can function only within the overall sector or system within which it operates. Therefore, the overarching institutional, socio-economic or even environmental context has to be properly understood for the groups/institutions to efficiently function within the larger context.

Elements of Capacity Building

The publication of UNDP (1996) defined three basic elements of capacity building in a holistic manner: (i) creating an enabling environment with appropriate policies and legal framework in place; (ii) institutional development including community participation; and (iii) human resources development and strengthening of managerial systems. A typical capacity building process is supposed to have three levels: Level 1 – the context in which all the actors operate; Level 2 – different internal dimensions consisting of institutional development, organizational development and human resources development; and Level 3 – the strategy development (Figure 3). The context shapes the present capacity and provides drivers of change as well as constraints to change. The context analysis should consider among other things:

(i) structural factors – history of state formation, natural and human resources and globalization trends; (ii) institutional factors – norms for exertion of power and authority, socially embedded norms, practices on governing reciprocity and exchanges, official laws and informal rules, broader sectoral development process (for example, government policy, developments in the market sector or donors); and (iii) actors in the water and sanitation sector – public, private, community or civil society.

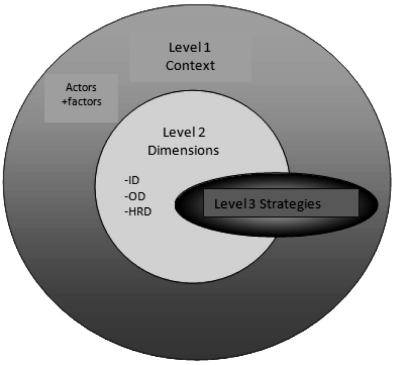

Figure 3 Holistic approach to capacity building: three basic elements

Capacity building in the water and sanitation sector can have three sub – levels, namely institutional development, organizational development and human resources development. The institutional development may consider: strategic harmonization among various organizations working in the sector leading to collective policy development for third parties; operational harmonization among different organizations within programmes and collective programme development; learning capacity involving exchange of knowledge and experience among organizations in the network leading to a learning process capable of influencing the policy and implementation process; and external influence on third parties to defend certain interests, help in defining the policies and to vouch for human rights.

Organizational development mainly deals with improving the strength and attainment of sustainability to achieve the objectives and fulfill the mission. Some of the important components to be specifically addressed are: strategy and planning, learning capacity, structure,

systems, staff, management style, culture, financial management, networking and technical competence. Human resources development is concerned with improvement and maintenance of quality and of personnel resources within the organization. It focuses on the knowledge, skills, attitudes and motivation of the personnel working in the organization. At the personal level, capacity building deals with gathering information and insight, changing perceptions, assumptions, values, common sense, practical skills, attitudes and style. In fact, human resources development can be broadly classified in to (i) management, (ii) technical, and (iii) attitudinal and motivational aspects.

Strategies

Capacity building strategies cover the assessment or analysis of the factors discussed earlier and deals with setting goals, preparation of plans to achieve the goals, chalking out inputs, outputs, outcome, targets, indicators and monitoring and evaluation techniques. All possible alternatives have to be studied in developing a strategy and funds are to be found to actually build capacity. According to Beyer (2002), choices in capacity building are dependent on different dimensions of capacity building such as knowledge and information, skills and attitude and consequently on different tools and activities envisaged. Some of the most employed instruments and activities are listed below:

- Information and knowledge management, e.g., websites and information desks
- Involvement and facilitation by external experts
- Coaching – support to an organization during the learning process
- Research – establishment of professional and research organizations/centers of excellence
- Training – academic and practical courses, workshops, seminars and on-the-job training
- Networking – network groups, twinning programmes, visits, e-conferences, regional workshops

- Education – vocational, scientific, professional - graduate and post-graduate programmes, distance education
- Development of management models for different organizations
- Mobilizing training funds and scholarships
- Projects and counterpart arrangements.

The strategy development is anchored on the principles of system thinking with focus on cooperation among different actors, multi-stakeholder process to achieve shared objectives and participation aiming at social learning and joint action planning (Beyer, 2002).

The relevance of capacity building may be now revisited in the background of the statements made above. Capacity building is considered as a pre-requisite in the development sector for poverty alleviation. The relevance of capacity building in the context of improvement of sector development is still debated. Though there is a global realization that capacity building is central to development, people are finding it difficult to explain what exactly is capacity building and what it comprises of.

Threshold Levels

There are several conceptual frameworks available dealing with the threshold of capacity building, costing of the activities and monitoring and evaluation of the capacity building activities. The threshold concept developed by Len Abram and presented at the UNDP Symposium (1996) is highlighted herein. For a given service to be sustainable in a particular location, the requirements of different components of capacity building can be to a large degree pre-determined. These represent the thresholds required for the service to be sustainable (Figure 4). The degree of capacity to be built for a given category will depend on the level of capacity already within the community and the level of service and technology projected. If the capacity already existing is less than the threshold, their capacity may have to be enhanced to bring to the threshold level. If threshold values are reached for all in all cases except for community acceptance, the project may not be sustainable since the revenue cannot be collected for the services rendered by the scheme.

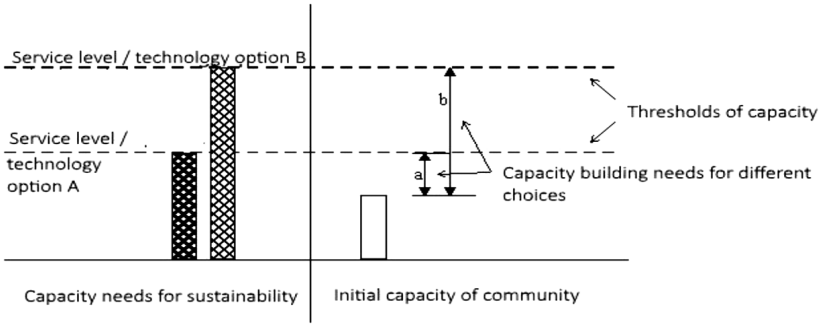

Figure 4 Threshold levels of capacity building for sustainability

The existing capacity of the community has to be assessed through a participatory approach. Thereafter, the service level options and technology choices can be established to identify the thresholds which the community must meet in each area to attain sustainability (Figure 5).

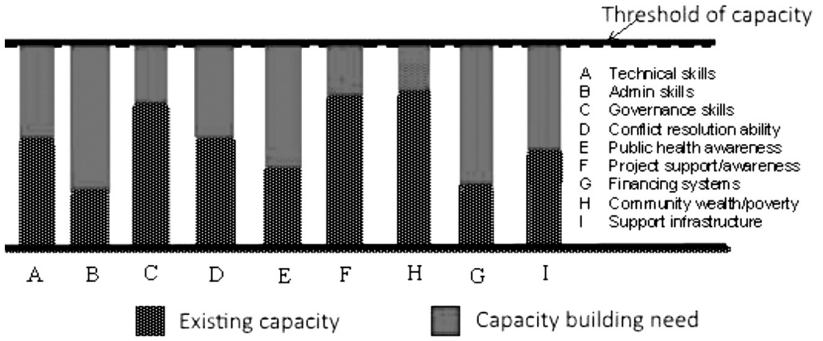

Figure 5 Thresholds to be met by the community for sustainability

Wherever the special skills to identify the threshold values do not exist, external agencies may be approached to attain the skills. The capacity building requirements can thus be clearly earmarked with pre-determined performance criteria and the capacity building activities costed with some degree of accuracy. The concept of thresholds and the clear definition of the tasks required within a capacity building programme make the evaluation of the performance

of capacity building and training agencies much easier. The failure of the system may be due to institutional or economic factors and generally not due to technical factors. The system requires systematic operation and maintenance which calls for necessary finance, efficient administration and total support of the entire stakeholder community. It is required that all categories of services rise up to the threshold value for sustainability; if one area lags behind, others may also get affected since they are highly interconnected.

Lessons Learnt

The need to share the insights in building capacities is fundamental but most of the lessons learned from investment and programme failures and relevant best practices identified are not readily available (WWF, 2005). There are not much works highlighting the context analysis and the main reasons attributed to the lack of such studies are: limited understanding of capacity building, paucity of funds to undertake such studies and top-driven capacity building initiatives that do not give room for analyzing the context. Moreover, Morgan et al. (2005) argues that many of the capacity assessment frameworks used are not clear of the nature of capacity and tend to focus on individual organizations; different actors and inter-relationship among them and the system as a whole are not identified in these studies. Political environment exerts great influence on the governance factor in capacity building. Capacity building calls for shifting in roles, power, access to resources, relationships and identities at all levels from individual to organizational, institutional and structural levels.

Often conflicting groups may be involved and pressures, vested interests and perverse incentives prevail leading to capacity destruction. Studies show that in Kenya, Nigeria and India political influence has been found to be a limiting factor in developing capacity (UNDP, 1996; UNESCO-IHE, 2005). There is a need to assess the political influence and interference and take care of these factors while formulating the capacity building strategy. The challenges of capacity building differ from sector to sector and country to country. However, the donors have realized that traditional tools like technical assistance and training are often ineffective in building sustained

sector capacity (World Bank, 2005).

The guiding principles in sustainable capacity building were formulated by IRC based on the lessons learnt from past experiences and are presented in the draft baseline document of the World Water Forum (2005). These guidelines include: (i) allocation of sufficient funds, need to customize capacity building approaches, emphasis on country-led capacity development planning with local ownership, activities built into larger and broader strategic frameworks, vision as a continuous process, need for coherent and coordinated approach, promotion of change of attitudes, appropriate systems in place for information sharing and knowledge management, and availability of appropriate tools for monitoring and evaluation.

CAPACITY BUILDING IN THE WATER SECTOR: INITIATIVES IN INDIA

The water sector has several diverse stakeholders, which include different ministries and departments of Government of India (GoI), several departments/organizations of the State Government, Panchayali Raj Institutions (PRI), Local Self Governments (LSG), industries, research organizations, academic institutions, Non-Governmental Organizations (NGO) and people themselves. Water is included in the State list of the Constitution and therefore, the activities related to planning, development and management of water are to be taken up by the respective States. Further the Constitution has a provision for regulation and development of inter-State rivers by the GoI to the extent to which such regulation is declared by the Parliament by Law to be expedient in public interest. A River Board Act also has been enacted for integrated management of inter-State rivers. National Water Resources Council formulates the national water policy and evolves consensus on water related issues among States.

The Ministry of Water Resources River Development and Ganga Rejuvenation (MoWRRD&GR) of GoI has several functions directly or indirectly related to capacity building, as outlined in the Allocation of Business Rules; some of the important ones are: development, conservation and management of water as a national resource;

matters related to National Water Resources Council; general policy, technical assistance, research and development, training and all matters relating to irrigation; matters related to inter-State rivers, implementation of Awards of Tribunals and River Boards; water laws and legislation; water quality assessment; dealings with international organizations, commissions and conferences relating to water resources development; issues related to international rivers; and bilateral and external assistance and cooperation programmes. Some of the major organizations/offices coming under the MoWRRD&GR are: Central Water Commission (CWC), Central Soil and Material Research Station (CSMRS), Ganga Flood Control Board (GFCB), Farakka Barrage Project, Central Water and Power Research Station (CW&PRS), Central Ground Water Board (CGWB), Bansagar Control Board, Sardar Sarovar Construction Advisory Committee and Upper Yamuna River Board. The major public undertakings under the Ministry are: Water and Power Consultancy Services (India) Limited and National Projects Construction Corporation Limited. The autonomous bodies in the Ministry include National Institute of Hydrology (NIH) and National Water Development Agency (NWDA). The statutory bodies under the Ministry include: Narmada Control Authority, Brahmaputra Board, Betwa River Board and Tungabhadra Board.

Some of the ongoing/completed schemes of Government of India/ State Governments with a strong component of capacity building are: development of water resources information system; hydrology project; groundwater management and regulation; research and development; National Water Academy; information, education and communication; river basin organization/authority; Accelerated Irrigation Benefit Programme; Command Area Development and Water Management. A few of the weaknesses of the MoWRRD&GR having a bearing on capacity building, as identified in their publication (MoWR, 2011), are: (i) there is no mechanism at the working level for effective coordination among various departments/agencies; (ii) the organizations under the Ministry comprise mainly of engineers and scientists and there is no in-house system to address environmental, social and other related aspects; (iii) the public interaction and

participatory approach in planning and decision making process is relatively poor; (iv) most of the organizations are advisory in nature and therefore not adequate to address policies and programmes for future challenges; (v) capacity building and collaborative international partnerships for sharing knowledge and expertise are not adequately addressed; (vi) due to lack of state-of-the-art laboratories in most part of the country, water quality monitoring is not satisfactorily carried out; and policies with regard to human resources management require changes. With all these limitations, the CWC, CGWB, CW&PRS, CSMRS, NIH and NWDA have considerably contributed to data collection, research, planning and design in the water sector and monitoring and management of water related environmental problems.

The National Water Policy 2012 has emphasized the need for institutional capacity building. The document recognizes the need for a forum at the national level to deliberate upon issues relating to water and evolve consensus, co-operation and reconciliation amongst party States. The need for a similar mechanism within each State also has been mentioned. The policy states that a permanent Water Disputes Tribunal at the Center should be established to resolve the disputes expeditiously in an equitable manner. The need for community participation in managing the water resources projects has been highlighted. The document also mentions that for improved service delivery on sustainable basis, the State Governments / urban local bodies may associate private sector in public private partnership mode with penalties for failure, under regulatory control on prices charged and service standards with full accountability to democratically elected local bodies. The Government also realizes the requirement for restructuring the departments / organizations at the Centre / State levels to make them tackle multi-disciplinary tasks. The need for institutional arrangements for river basins to monitor and analyse the data on hydrology, hydrogeology, water quality and relevant aspects of water management has been stressed. States should be encouraged and incentivized to undertake reforms and progressive measures for innovations, conservation and efficient utilization of water resources.

There is a realization that proper management of water as a resource cannot be ensured by the Central Government or even by the State Governments on their own. The discussion paper of TERI (2014) dealing with the perspectives on water resources policy states that while the governments can provide the funding, knowledge, technical and management support, by its very nature, water requires active cooperation at individual and community user levels. The importance of local culture and practices on water management has been brought to light in the paper as also the role of community institutions and PRIs.

The MoWRRD&GR and other allied departments of Government of India, after detailed consultations, came out with the functions of National Water Mission aiming at 'conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within the States through integrated water resources development and management' (CWC, 2014). Out of the five goals, one is to improve the efficiency of water use by 20%. Strategies for achieving this goal, as given below, have several components directly or indirectly dealing with capacity building:

- Research for increasing water efficiency and maintaining water quality standards
- Incentive for recycling of water
- Development of eco-friendly sanitation system
- Improving the efficiency of urban water supply system
- Efficiency labelling of water appliances and fixtures
- Promotion of water efficient techniques and technologies
- Pilot projects for improvement in water use efficiency
- Promoting water regulatory authorities for ensuring equitable water distribution and rational charges for water facilities
- Introducing mandatory water audits in all sectors
- Adequate provision for operation and maintenance of water projects
- Incentive for conservation and efficient use of water
- Incentivizing use of efficient irrigation practices and full utilization of the creative facilities.

The National Water Mission forms part of India's Intended Nationally Determined Contribution to bring down the greenhouse gases and impact of climate change. In the context of operation and maintenance of domestic water supply systems, the Guidelines of CWC (2014) envisioned certain institutional and policy reforms. The key issues identified in connection with the poor operation and maintenance of water resources projects, listed below, have a bearing on capacity building:

- Lack of funds and inadequate revenue generation
- Inadequate data base on O&M
- Multiplicity of agencies and overlapping responsibilities
- Inadequate training of personnel and lesser attraction for maintenance assignments, investigation and planning
- Lack of monitoring and performance evaluation
- Inadequate emphasis on preventive maintenance.

The Guidelines of CWC (2014) emphasizes the need for Public Private Partnership (PPP) for carrying out the functions of operation, maintenance, distribution, billing and collection of revenue from consumers. Some progress has already been made in this direction (WSP, 2011). In this context, the need for empowering LSGs has been emphasized. The Guidelines also highlight the need for creating public awareness; efficient use of media; participation of women; water conservation and saving techniques; measures to motivate people, communities and governments for achieving better efficiency in operation and water management.

In the irrigation sector, the need for a synergy among the Water Resources Department (WRD), Command Area Development Authority (CADA) and Water and Land Management Institute (WALMI) of the State has been emphasized in the Guidelines of CWC. It is also suggested that the State Governments restructure the WRD to bridge the knowledge gap in planning, development and management of water resources in a sustainable manner so as to make it more service-centric and professional. The States are also required to formulate, adopt/implement State Water Policy in line with the National Water Policy. The need for establishing

regulatory authorities at State level has also been stipulated for judicious, equitable and sustainable allocation and distribution of water and its utilization. The Guidelines stress the need for systematic policy with focus and administrative initiatives like revision of State Irrigation Acts for achieving irrigation efficiency. The requirement for strengthening WALMIs for imparting training and technical support to the personnel and professionals involved in the water sector and the farmers of Water User's Associations (WUA) has also been envisioned in the Guidelines. Participatory Irrigation Management involving WUAs, local bodies and gram panchayats, NGOs including women is to be practised.

The Guidelines (CWC, 2016) also mandate the State Government and local bodies to coordinate the approaches with regard to selection and location of industries of a specific nature considering their water requirement and facilities for wastewater disposal. The need for a policy for zoning the basins according to the type of industries and quantity of water consumed/discharged has been recognized. The requirement for constituting water conservation groups in industries and imparting training programmes to them for efficient use of water has been highlighted in the Guidelines.

India has forged partnerships with Water and Sanitation Programmme – South Asia, which is a World Bank executed programme funded by several external support agencies including DFID, SIDA, SDC, and Dutch Aid. This has helped considerably in capacity development in the area of water resources projects. The decentralized drinking water and sanitation programme entrusts the community and local governments the responsibility to plan, implement, operate and manage water supply schemes; this is expected to shift the State Government from the role of provider to facilitator. The programmme also envisages empowerment of Gram Panchayats and system design based on the willingness of consumers to pay for a particular level of service. Sector reform project for water supply and Total Sanitation Campaign (TSC) were launched in 1999 and have been successful to a great extent. There have been also several attempts to revive age-old practices for sustaining local water resources. Attempts like *Neeru Meeru* and *Pani Roko Abhiyan*

and several attempts in rain water harvesting in States like Rajasthan, Tamil Nadu, Kerala and Union Territory of Lakshadweep are worth mentioning. The cardinal principles identified by the Ministry of Rural Development of Government of India are: awareness generation, transparency, community participation and social auditing (Water Forum 2002).

One of the well thought out schemes of MoWRRD&GR in the area of capacity building was the Command Area Development and Water Management Programme implemented in different States. There has been a stress on training, monitoring, evaluation and demonstration in relation to water use efficiency and adaptive trials. The one-time functional and infrastructure grants made available to the WUAs have considerably helped them to function effectively and achieve water use efficiency in the command areas of irrigation projects coming under the programme. The WALMIs started in the States initially with support from the World Bank and USAID have considerably contributed to capacity building among professionals and farmer community. The water sector reforms to be undertaken by different States/WALMIs include:

- Capacity building in improved water management at micro-level
- Facilitating institutional strengthening of WUAs
- Serve as a nodal institute for information, education and communication and demonstration on optimal use of land and water
- Promotion on mass awareness on water related issues
- Performance evaluation and benchmarking of completed irrigation projects
- Studies on water use efficiencies and suggestions for their improvement
- Filling up the gap in the area of research in water sector.

The LSGs and NGOs implementing different projects have contributed considerably to capacity building for local water resources development and management. The participatory planning and

implementation of water resources projects in Kerala have helped in incorporating traditional practices with modern technologies. Artificial recharge propagated by CGWB and the construction of cost-effective rain water harvesting structures initiated by different State Governments have been practised in several places in the country through the initiatives of PRIs and NGOs. Many of the projects had capacity building components which helped in conserving several of the aquatic ecosystems facing degradation. The projects funded by India-Canada Environment Facility and Planning Commission have helped in capacity building among the stakeholders who depended on the Loktak wetland in Manipur – a Ramsar site. Similarly, the concerted efforts in capacity building and conservation activities improved the Chilika wetland ecosystem and the Ramsar Award was presented to the Chilika Development Authority in 2002. The watershed based project in Attapadi funded by Japan International Cooperation Agency has been instrumental in building capacity among the tribal communities of Palakkad District in Kerala, who took initiative in large-scale water conservation works. There are several such examples of capacity building in the water sector in the country. However, more concerted efforts are called for to fill the gaps in capacity building with special reference to the water sector. The success stories and case studies have to be documented for helping future capacity building initiatives.

IDENTIFYING THE GAPS AND WAY FORWARD

In the background of the reviews already available and the experiences of experts and agencies from within the country and abroad, a general picture on the shortcomings of the identifying the gaps may help in formulating the capacity development programmes in the days to come. The publications of UNESCO-IHE (2005) and UNDP (1996) pointed out that in countries like India political influence has been found to be the limiting factor in developing sufficient capacity. The other countries bracketed with India are Kenya and Nigeria.

In most of the developing countries, the projects and programmes in the area of water sanitation are often administered by the government departments. In India, societies are registered in certain cases to

implement the major projects in the water and sanitation sector. But, most of these societies formed with the intention of having more functional freedom capacity development programmmes in the country has emerged. All these identified shortcomings may not be important or relevant in all projects or programmmes in one particular sector or region. However, this attempt is managed by senior officers of the government. It is often pointed out that as such there is not much of a difference in the functioning of these so called 'autonomous' bodies and the government departments. The government generally plays the role of a provider and not of a facilitator in the water sector of the country. The present top-driven approach has to give way for stakeholder participation in planning, implementing, operating and managing the projects in the sector.

Most of the government departments involved in the water sector in the country are dominated by engineering professionals who are not sufficiently exposed to social or environmental sciences during their academic career. They also often lack the soft skills to deal with the stakeholders in the field. There is also no in-house mechanism in these departments to address social, economic and environmental issues. The Water Resources/Irrigation Departments of the States have often emerged out of the Public Works Departments (PWD) and in some States these departments are still attached to the PWD. Some of these professionals are not familiar with the peculiar problems encountered in natural resources management. The scientists working in the R&D institutions and the laboratories in the country dealing with different problems in the area of water and sanitation are also not often sufficiently exposed to the real conditions prevailing in the field.

There is no mechanism for effective coordination amongst various departments/agencies of the government. The interaction of government departments/agencies with the private institutions, NGOs and other stakeholders in the water sector is also minimal. Several of the water conflicts could not be resolved due to the lack of proper communication and interaction among all concerned in the sector. Problems requiring technical solutions or consensus among different stakeholder communities are politicized and precipitated.

The Cauvery Agreement of 1924 was possible only because it was negotiated by competent engineers belonging to both the aggrieved parties, who could understand the totality of the problem and suggest a solution acceptable to all concerned.

The MoWRRD&GR itself has admitted that adequate attention has not been given to capacity building in the sector and international collaborative partnerships for sharing of knowledge and expertise. The need for a policy to address different aspects related to human resources management has been recognized by the MoWRRD&RG. Necessary actions are to be initiated in this direction at the earliest considering water crisis faced and also the need for translating the principles of IWRM to action for solving the problems in the field.

There are only a few universities/institutions in the country which conduct interdisciplinary programmes in the area of water. Only two or three universities conduct postgraduate programmes in IWRM. Subjects related to water resources development and management are not taught in most of the undergraduate programmes. The polytechniques and other technical institutes also do not give importance to the programmes related to water management and skill development in the water sector. Though several relevant subjects are taught in the schools, importance given to subjects related to water is minimal.

Some of the PRIs and LSGs have been keen to take up projects in the area of water resources development by combining modern technology with traditional wisdom. However, they did not have necessary knowledge base and skill to implement the projects and some of the projects ended up as failures. The PRIs and LSGs are in an advantageous position to plan for local water resources projects since they are fully aware of the local environment and can motivate the stakeholders to fully participate in the planning, implementation, operation and maintenance of the local level projects.

In many cases, funds are not available to take up new projects and in the existing projects revenue generated is not even sufficient to meet the operation and maintenance cost. In the absence of awareness, motivation, participation and incentives, the stakeholders are reluctant

to pay for the level of services provided. Capacity building is very relevant in this context in India. An earnest attempt has not been made to explore the Public Private Participation (PPP) in the water sector. In spite of the apprehensions and reluctance, several projects have come up in the country under the PPP mode in recent years.

The full potential of NGOs has to be utilized in the water resources development sector. Though there are several NGOs involved in the area of natural resources management, only a few of them are competent to implement projects in the field. However, there are several other NGOs with sufficient levels of capacity and experience in implementing innovative projects in the field. Unfortunately, their capabilities are not fully made use of in the project formulation and implementation stages. This is partly because there is a huge difference in the style of functioning of government departments/ organization and NGOs.

The thresholds of capacity development are often determined at the pre-project stage through a Participatory Rural Appraisal (PRA) or any other suitable appraisal surveys. This is not done in several projects and it becomes difficult to know whether the output, outcome and targets are achieved. In the absence of a pre-determined threshold values and also indicators, it may not be very often possible to monitor and evaluate the performance of capacity building projects, programmes or activities.

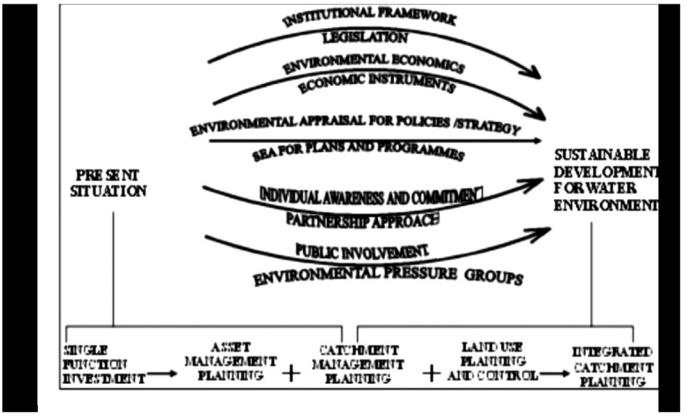

Figure 6 Pathways to sustainable water environment posing challenges to capacity building

The capacity building activities in the water sector is not always a continuous process as required. Even in spite of the withdrawal strategies introduced in some projects, capacity building almost comes to a halt at the end of a major project or programme. The capacity development initiatives in the country very often do not encompass the three important levels of development, namely, (i) the context in which all actors operate; (ii) internal dimensions consisting of institutional, organizational and human resources dimensions; and (iii) the strategy development.

The various aspects to be considered in the context of sustainable water resources management are given in Figure 6; the capacity building for the management of water environment should cater to the requirements of all the aspects highlighted therein.

Conclusions

The global water crisis has been highlighted and the international initiatives such as MDGs/SDGs have been discussed in the light of sustainable development of water resources. The relevance of capacity building is brought out in the context of sustainable development of water resources in India. The need for addressing capacity building from a holistic perspective and also for continuity of the different capacity building projects and programmes has been emphasized. The threshold approach to plan and monitor the capacity building services and activities has been brought to light.

A few areas requiring focus in the context of capacity building in the water sector of the country are: participation of stakeholders; more representation for experts in the areas of social and environmental sciences in the departments dealing with water; coordination among departments/agencies, formulation of appropriate policies on human resources management, stress on subjects dealing with water in the educational institutions, empowerment of PRIs, LSGs and NGOs, generation of more revenue and funds, initiating Public Private Partnerships and inculcating proper understanding on the concept and requirements of capacity building. The way forward conceptualized in the paper highlights the important areas to be considered while planning for capacity building.in the water sector.

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K B Biswas and Sushil Gupta

Groundwater Assessment and Development

Background

Groundwater is a replenishable but finite resource and is an important part of the water cycle. Groundwater gets seasonally recharged through rainfall and other sources which is reflected in the water level fluctuations - which is a result of all inflows into and outflows from the aquifer system.

The need for a reliable estimate of groundwater recharge is well recognized. Sustainable development and management of groundwater resources necessitates assessment of availability of groundwater, its existing utilization and balance for future utilization. Quantitative assessment of groundwater resources is being carried out by several countries on different scale and frequency. In India, groundwater resources estimation at a Country/ State/block level is being carried out at periodical intervals.

The strategy of achieving food security for a nation that was carrying a begging bowl for grains in the sixties and seventies was influenced by a strong link between groundwater development through rural electrification, institutional credit support and development and construction of new and easier tube wells and pumping technologies. Though this strategy worked and today, India is self-sufficient in food grain production, it led to certain negative impacts on the groundwater regime. While groundwater resource availability is determined by the physical environment, the dynamics of groundwater use are determined by the socio-economic environment (nature of economic activity, patterns of population density, societal norms) and the institutional environment (legal, administrative, macroeconomic and political).

Contribution of Groundwater to National Economy

The nature of the resource and the relative ease (and often, convenience) of decentralized access has meant that groundwater is the backbone of India's agriculture and drinking water security. It is a common-pool resource, used by millions of farmers across the country. It remains the only drinking water source in most of India's rural households. Many industrial units in the country depend upon groundwater. India is the largest groundwater user in the world, with an estimated usage of around 230 cubic kilometers per year, more than a quarter of the global total. Through the construction of millions of private wells, there has been a phenomenal growth in the exploitation of groundwater in the last five decades.

Groundwater played a crucial role in the success of the Green Revolution thus providing self-sufficiency in food grain production and also strengthening India's economy. It is, at present, also playing a major role in urban and rural water supplies. At present, 60 % of irrigation, 85% of rural drinking water and 50% of urban water is provided through groundwater. In the last 40 years groundwater has contributed more than 80 % to net irrigated area and it accounts for about 9 % of the GDP. According to an independent study conducted by IWMI1 (Socio-Ecology of Groundwater Irrigation in India), contribution made by groundwater to the agricultural economy of India has grown steadily since the early 1970s. Groundwater now creates more agricultural wealth than any other irrigation source. In 1993, for example, the use of groundwater generated INR 132 billion, while the same for surface water generated only INR 115 billion. This is a complete reversal from the corresponding values of INR 21 billion and INR 77 billion respectively in 1970. Since 1975, Indian agriculture has emerged as the world's largest consumer of groundwater to grow food and fiber. This has been primarily due to the fact that groundwater offers greater control in the hand of the user as compared to other sources. It also commands higher irrigation efficiency of nearly 65% as compared to surface water based irrigation that is about 35% in India.

Groundwater development has been growing at a fast pace since the past few decades. Whereas the stage of groundwater development in

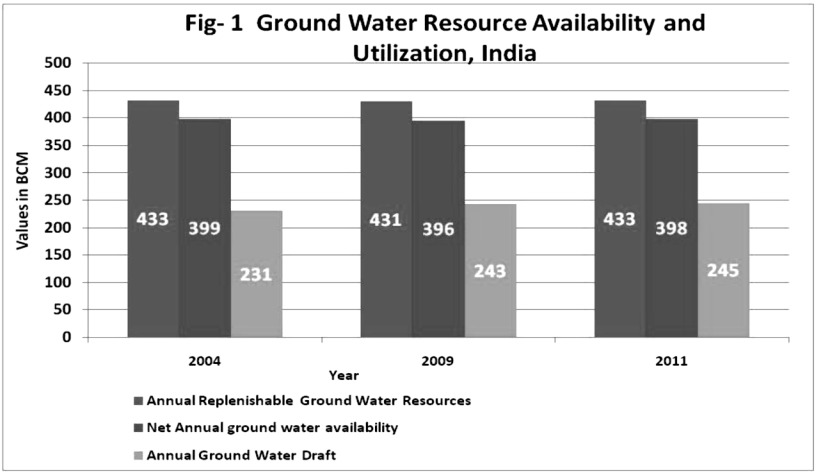
1991 was 32%, it is now nearly 62%. It has been estimated that the ultimate irrigation potential that can be created through groundwater with the current irrigation practices is 64.01 mha. Out of this, only 6.5 mha was created till 1951 which went up to nearly 46.11 mha at the end of X plan and about 49 mha at the end of XI plan.

GROUNDWATER DEVELOPMENT SCENARIO

Groundwater development over the years

Historically, in the early phase of groundwater development in the 1950s, groundwater extraction was dominated by traditionally dug wells with depths generally not exceeding 10 m. The number of wells had increased substantially by late 1970. On the other hand, most of the tanks became unusable for irrigation due to poor maintenance and this resulted in even greater dependence on groundwater. During the third phase beginning from the mid- 1980's, the extraction technology started changing towards submersible pumps and the depth of wells increased to beyond 100 m. Water extraction increased rapidly under the influence of subsidies on electricity, lack of metering, credit availability, and the commercialization of agriculture. The number of shallow wells doubled roughly every 3.7 years between 1951 and 1991, the total crossing 18.5 million wells nationwide and accounting for over 50% of the irrigated area. By 2011–12, groundwater provided for over 62 % of the irrigated area, and about 80 % of the domestic water supply year. Groundwater resources in the country are withdrawn by more than 20 million wells (World Bank, 2010).

Groundwater resource estimation has been carried out in India jointly by CGWB and concerned State government department, for the years 2004, 2009 and 2011. The groundwater resource availability and utilization for these years are shown graphically in Fig-1. The change in categorization of assessment units is also graphically depicted in Fig-2 and its spatial distribution is shown in maps in Fig-3. There is an overall increase in groundwater development in 2009 as compared to the 2004 figures, particularly in the areas where future scope for groundwater development existed. This has led to the increase in the stage of gGroundwater development from 58% in 2004 to 61% in 2009. The over-exploited areas are mostly concentrated in three parts



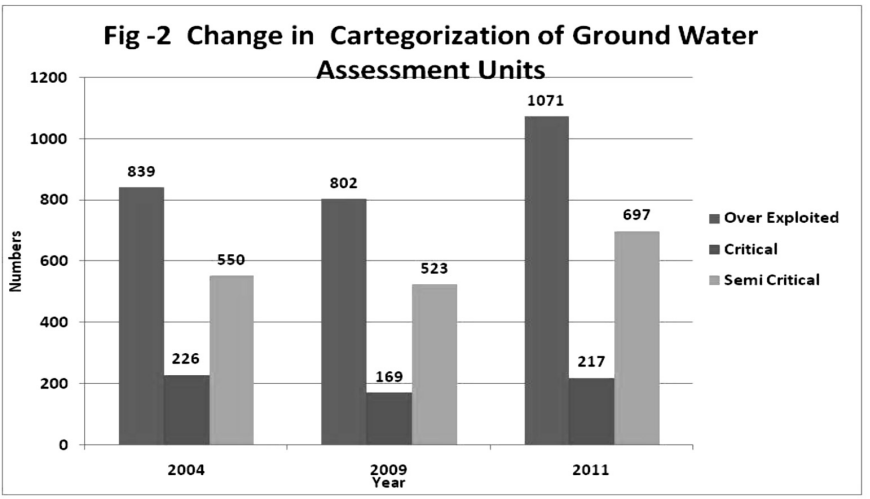
of the country- (a) north western parts where though replenishable resources is abundant but there has been indiscriminate withdrawal of groundwater for irrigation leading to over-exploitation, (b) western part of the country, particularly in Rajasthan, where due to arid climate, groundwater recharge itself is less, leading to stress on the resource and (c) Peninsular India like Karnataka and Tamil Nadu where due to poor aquifer properties, groundwater availability is less. Fig-3 shows that since 2004 several areas of Gujarat, Chhattisgarh, Andhra Pradesh, Karnataka, Uttar Pradesh, Madhya Pradesh and West Bengal have become groundwater stressed.

The assessment figures for 2011 do not show any significant change as compared to those of 2009 except for the fact that the number of assessment units have increased by 765 (about 13%) from the previous assessment. The main reason for changes in the number of assessment units is that previously (till 2009), assessment in Tamil Nadu was carried out on a block-wise basis. In 2011, the assessment unit was 'phirka' which is a smaller administrative unit than a block.

As per the latest estimates (i.e. as on 31st March, 2011), the water resource potential or annual water availability of the country in terms of natural runoff (flow) in rivers is about 1,869 Billion Cubic Meter (BCM)/year. However, the usable water resources of the country

have been estimated as 1,123 BCM/year. This is due to constraints of topography and uneven distribution of the resource in various river basins, which makes it difficult to extract the entire available 1,869 BCM every year. Out of the 1,123 BCM/year, the share of surface water and groundwater is 690 BCM/year and 433 BCM/year respectively. Setting aside 35 BCM for natural discharge, the net annual groundwater availability for the entire country is 398 BCM. Against this availability the annual groundwater draft is 245 bcm. The Stage of groundwater development works out to about 62%.

Out of 6607 assessment units (Blocks/ Mandals/ Talukas/Firkas) in the country, 1071 units in various States have been categorized as 'Over-exploited' i.e. the annual groundwater extraction exceeds the net annual groundwater availability and significant decline in long term groundwater level trend has been observed either in pre-monsoon or post- monsoon or both. In addition, 217 units are 'Critical' i.e. the stage of groundwater development is above 90 % and within 100% of net annual groundwater availability and significant decline is observed in the long-term water level trend in both pre-monsoon and post-monsoon periods. There are 697 semi-critical units, where the stage of groundwater development is between 70% and 100% and significant decline in long term water level trend has been recorded in either pre-monsoon or post-monsoon. 4530 assessment units are safe where there is no decline in long term groundwater level trend.



Apart from this, there are 92 blocks/phirkas completely underlain by saline groundwater.

The level of groundwater development is very high in the states of Delhi, Haryana, Punjab and Rajasthan, where groundwater development is more than 100%. This implies that in these states, the annual groundwater consumption is more than annual groundwater recharge. In the states of Himachal Pradesh, Tamil Nadu and Uttar Pradesh and the Union Territory of Puducherry, the level of groundwater development is 70% and above. In the rest of the states, the level of groundwater development is below 70%. Over the years, usage of groundwater has increased in areas where the resource was readily available. This has resulted in an increase in overall groundwater development from 58% in 2004 to 62% in 2011.

The Constitution lists "water supplies" under the State List, thereby giving states jurisdiction over the groundwater within their boundaries, while one of the functions of the Union Ministry of Water Resources is "overall planning for the development of groundwater resources". The government, from time to time has stated that groundwater needs to be managed as a community resource. However, the Easement Act, 1882 states that every owner of land has the right to collect and dispose within his own limits all water under the land and on its surface which does not pass in a defined channel. The legal consequence of this law is that the owner of the land can dig wells in his land and extract water based on availability and his discretion. Additionally, landowners are not legally liable for any damage caused to the water resources as a result of over extraction. The lack of regulation for over-extraction of this resource further worsens the situation and has made private ownership of groundwater common in most urban and rural areas.

In an attempt to regularize the matter, the Government of India established the Central Groundwater Authority in 1997 to regulate and control groundwater development with a view to preserving and protecting the resource. The legislative framework is, in fact, reasonably robust, and the priority lies in enforcement of existing measures, supported by innovative approaches such as an expansion of community- based management. In 2011, the government

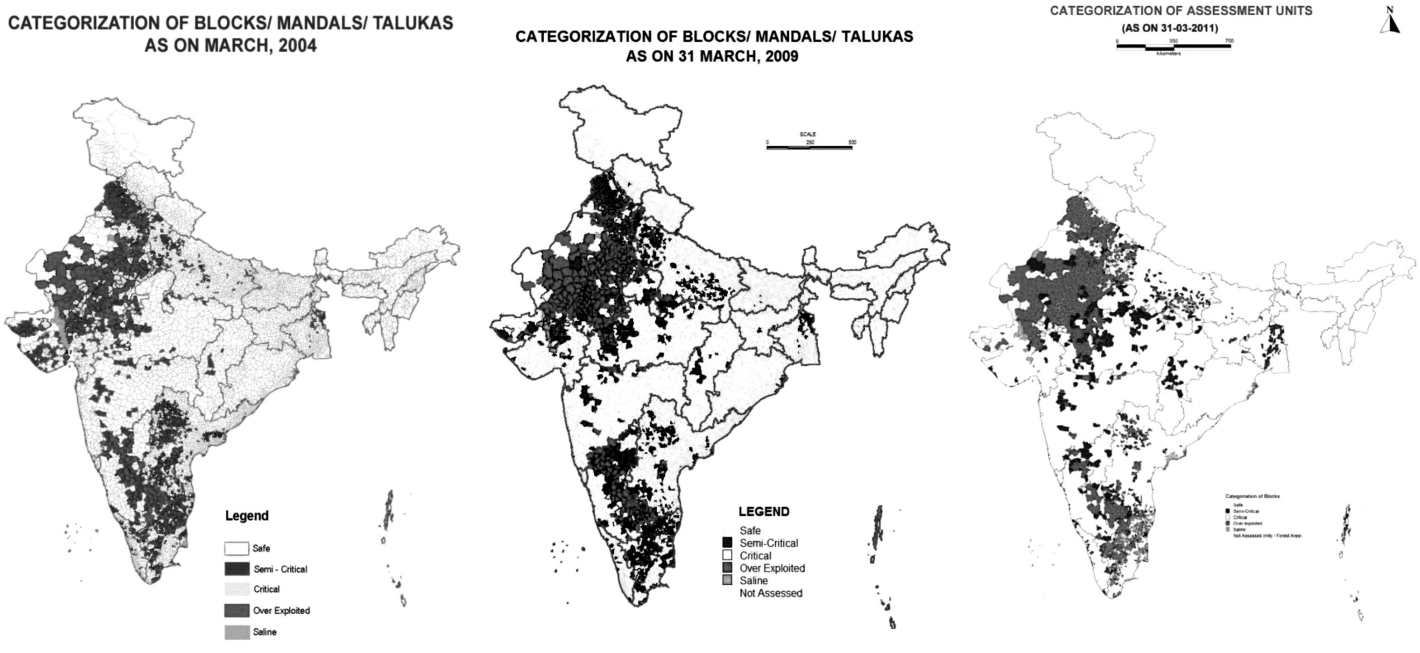


Fig- 3 Map showing Categorization of Assessment units for the years 2004, 2009 and 2011

published a Model Bill for Groundwater Management, based on which states could choose to enact their laws. In addition, it outlined a National Water Policy in 2012 articulating key principles relating to demand management, usage efficiencies, infrastructure and pricing aspects of water. As recommended in this policy, the government published a National Water Framework Bill in 2013 which is under revision.

Groundwater is a ubiquitous, yet invisible resource and it is this quality that necessitates it to be developed optimally keeping the local conditions in view. For optimal development, it is essential that the resource be assessed properly and accurately in a scientific manner. Being an invisible resource, groundwater expresses its availability through mostly indirect measurements and few direct measurements. The two main components that are required to be assessed are the groundwater recharge and the discharge so as to complete the flow equation of water balance. Groundwater is a dynamic resource, and the quantum depends greatly on various factors like rainfall, irrigation, crops etc. It thus needs to be assessed periodically, the periodicity to be defined by the user and planner. Thus, even though groundwater is a powerful tool for agriculture and poverty reduction, developing and managing this resource in a sustainable way is a tremendous challenge. It is in this context that several studies have been carried out for assessment of groundwater resources both at the national as well as international level.

GROUNDWATER ASSESSMENT

Groundwater, as discussed above, is an invisible and endangered resource. In order to develop it optimally on sustainable basis, it is essential that its availability is assessed as accurately as possible. In the last three decades, numerous recharge studies have been reported in the scientific literature. A better understanding of the methods, their applicability and limitations is an important prerequisite to choose the appropriate techniques for groundwater resource estimation. The methodologies adopted for computing groundwater resources, are generally based on the hydrologic budget techniques. The hydrologic equation for groundwater regime is a specialized form of water

balance equation that requires quantification of the components of inflow to and outflow from a groundwater reservoir, as well as changes in storage therein. Some of these are directly measurable, few may be determined by differences between measured volumes or rates of flow of surface water, and some require indirect methods of estimation.

Groundwater Assessment –Existing Practices

The exercise of groundwater resource assessment prior to 1972 was mainly restricted to the areas getting International Development Agency (IDA) benefits funds under Agriculture Refinance and Development Credit Project-I (ARDC-I). Under the first ARDC credit project, the Central Groundwater Board identified certain areas as possible area for groundwater development. In 1972, Ministry of Agriculture, Government of India circulated guidelines for an approximate evaluation of groundwater potential to all the State Government and ARDC. These were ad hoc norms based on the studies undertaken by CGWB, State Groundwater department and Universities.

The methodology suggested by Groundwater Over-Exploitation Committee (1979) has been recommended for revision to make it more scientific as and when additional data is generated in the field of groundwater assessment. In the year 1982, Government of India constituted "Groundwater Estimation Committee" (GEC) with the members drawn from various organizations engaged in hydrogeological studies and groundwater development. In 1984 this Committee, after reviewing the data collected by central and state agencies, research organizations, universities, etc. recommended the methods for groundwater recharge estimation. GEC (1984) recommended that the groundwater recharge should be estimated preferably based on groundwater level fluctuation method.

The experience gained in more than one decade of employing the methodology recommended by GEC-84, supplemented by number of research and pilot project studies, has brought into focus the need to update the GEC-84 methodology. The Ministry of Water Resources, GOI constituted a committee to review and revise the

Groundwater Resource Estimation Methodology. The committee after in-depth discussion finalized its report on **Groundwater Resource Estimation Methodolgy-1997** that was approved and issued by the Ministry of Water resources. On the basis of GEC-1997, Central Groundwater Board along with the states assessed the Dynamic Groundwater Resources of the country periodically and so far the reports -"Groundwater Resources of India" –have been published for the years 2004, 2009 and 2011. The report for 2013 is likely to be issued very soon.

Salient features of the GEC -1997 recommendations are as below:

- Watershed may be used as the unit for groundwater resource assessment in hard rock areas, which occupies around 2/3rd part of the country.
- For alluvial areas, the earlier practice of assessment based on block/ taluka/ mandal-wise basis is retained.
- Groundwater assessment was to be made separately for non-command and command areas. Areas of poor quality of groundwater have to be treated separately.
- An alternative methodology was provided for estimation of specific yield based on application of groundwater balance in dry season which would be applicable in the non-command part of hard rock areas.
- Norms for return flow from irrigation were based on the source of irrigation i.e. groundwater or surface water, type of crops, and depth to water table below ground level.
- An explicit provision was introduced on recharge due to water conservation structures.
- Groundwater levels were made an integral part of groundwater assessment and categorization of areas for groundwater development was based on the stage of groundwater development and long-term trend of these levels.
- Allocation for domestic and industrial water supply was recommended based on population density and relative load on groundwater for this purpose.

Groundwater Resource Estimation –International Best Practices

In order to standardize the existing practice of groundwater resource estimation, the R&D Advisory Committee on Groundwater Estimation constituted by the Ministry of Water Resources was entrusted with the responsibility to upgrade the methodology and norms. Accordingly, a review of the best international practices on groundwater estimation and the existing methodology practised in India was carried out. A report on "Assessment of Groundwater Resources- A Review of International Practices" was prepared by CGWB (also available on CGWB official website www.cgwb.gov.in) which proposes a new approach for estimation of groundwater resources in India, taking cues from international best practices. Some of the important outcomes of the R&D committee have been briefly discussed in the next few paragraphs.

Methods of Groundwater Resource Estimation

Changes in groundwater storage involves various recharge and discharge processes. Major recharge sources are rainfall, recharge from rivers, recharge from ponds, recharge from irrigation fields etc. Similarly, discharge processes include evapo-transpiration, pumping, base flow to rivers etc. Recharge is defined as the downward flow of water reaching the water table forming an addition to the groundwater reservoir. Lerner (1997) defines three types of recharge viz. (i) Direct Recharge: direct vertical percolation through the vadose zone; (ii) Indirect Recharge: Water from the surface water courses like rivers and canals percolate to the groundwater reservoir through the beds of the surface water courses.; and (iii) Localized Recharge: an intermediate form of groundwater recharge resulting from surface or near surface concentration.

Some of the most widely used techniques for estimation of groundwater recharge are as below:

- **Water Budget method** is based on the principle of Conservation of Mass, wherein it is postulated that total quantity of water in the hydrologic cycle would remain constant.

- **Base flow measurements-**Use of base flow discharge to estimate recharge is based on a water-budget approach, in which recharge is equated to discharge. This approach is data intensive and is mostly employed for watersheds with gaining streams.
- **Water Table Fluctuation (WTF)** method is based on the premises that rise in groundwater levels in unconfined aquifers are due to recharge water arriving at the water table. It is the most widely used method for estimating recharge. Water Table Fluctuations represent spatially averaged recharge.
- **Cumulative Rainfall Departure (CRD)** is the departure of rainfall in the period of assessment from the mean rainfall of the preceding time and could be used to quantify groundwater recharge. In this method, percentage of CRD, which results in recharge and specific yield ratio, is estimated through an optimization process.
- Several other methods based on physical parameters have also been used widely depending upon suitability such as Zero Flux Plane, Darcian Methods, Lysimeters, methods based on temperature measurements, Electrical Resistivity measurements, Neutron logging of moisture profiles, Gravity Recovery and Climate Experiment (GRACE).
- **Chemical and Isotopic Methods** include stable isotopes of Hydrogen and Oxygen, groundwater dating, Chloride Mass Balance, Concentration method, Flux method, Environmental Tritium, Peak tritium, Total tritium, Injected tritium and other tracers.
- **Numerical Modelling and Empirical Methods** include runoff models, modelling based on unsaturated zone and on saturated zone. Mathematical modelling is a powerful tool, where all the dynamics can be accommodated. However, its accuracy again is dependent on the accuracy of the input parameters.

Recharge estimation methods should be chosen based on data availability and study objective. Two different methods may yield

different recharge rates and still both can be correct. Since the recharge is estimated indirectly, it is always recommended to use more than one method for reliable estimates. The combination of reliable local data, remote sensing, and GIS technology often promise for a better understanding and quantification of recharge over large areas.

Regional and National Scale Groundwater Resources Assessment- International Practices

Recharge assessment at the local scale mostly addresses issues at the local level. Regional scale resources assessment on the other hand calculates groundwater budgets of a regional aquifer system/ groundwater basin. Regional groundwater resources assessment is the key to the understanding of the sources of water to groundwater system and how water withdrawals change the components of flows in the hydrologic cycle. A regional ground-water balance is based on the principle of conservation of mass within defined regional ground-water flow system.

In comparison to site specific studies or regional groundwater assessments, country level groundwater assessment offers additional challenges especially in terms of data collection and maintaining uniformity and comparability of the results. Some of the country level groundwater assessment practices in United States of America (USA), Australia and South Africa have been reviewed below for better understanding of international resource assessment methods.

- In USA, Regional Aquifer System Analysis is being undertaken at periodic intervals in a systematic manner covering the entire country. The methodology of assessment depends on the hydrogeological conditions and the regional level management policy. The groundwater recharge, groundwater storage and surface-groundwater interaction are estimated based on the methodologies including climatic soil moisture balance study, water budgeting and numerical groundwater modelling. The policy of Safe/Sustainable Yield and Planned Depletion are employed to define the exploitable quantity of groundwater in the region. The strong database and effective

regulatory mechanism have enabled proper assessment and effective management of the resource. The Regional Scale assessments have an important role in precise estimation of national scale assessment. GIS based approach as adopted in USA provides a better understanding of groundwater resources assessment of an area.

- Murray Darling Basin (MDB), Australia is a typical case study on groundwater management based on Sustainable Yield Policy. It highlights the significance of prioritization of assessment unit based on level of extraction for choosing the method for groundwater resources assessment. The definition of Sustainable Yield Policy in Australia also varies from State to State. The Assessment units are mostly Groundwater Management Units (GMUs). Groundwater balance is estimated through a number of methods thereby decreasing the uncertainty in the estimation. The system of licensing of groundwater extraction units facilitate in better estimation of groundwater withdrawal. Three types of categorization based on the level of utilization vis-à-vis water resources availability enable analysis of the groundwater situation in the assessment area from different perspectives. Finally, "Reliability Assessment" provides a systematic arithmetic tool to estimate the confidence level of the assessment.
- The groundwater resources estimation in a countrywide scale is probably most organized in South Africa. Groundwater Resources Assessment is done at periodic intervals and methodology for estimation has changed from time to time. The process of estimation takes into consideration the attributes such as recharge, aquifer storage, ease of abstraction of groundwater, portability of water, ecological considerations and confidence level of estimation. Considering the similarities in hydrogeological settings between South Africa and India, some of the relevant attributes, resources estimation procedure followed in South Africa, can be suitably dovetailed in Indian methodology.
- Quantification of recharge in an urban environment is a much

bigger challenge than that in a natural or rural environment because of interaction of too many components in an urban area. Hydrogeology in urban areas is largely influenced by human interference. Groundwater recharge also gets greatly modified. Different chemical and isotopic tracers are applied to identify sources and pathways of recharge. Water balance technique is the preferred method for estimation of recharge which is then validated by numerical modelling technique. Case studies from three cities across the globe, viz. i. Seoul, South Korea; ii. Austin, USA; and iii. Perth, Australia, indicate that recharge from other sources like seepage from water supply and sewers, return flow from irrigation etc. is mostly higher than recharge from precipitation.

A New Approach Recommended for Estimation of Groundwater Resources in India

A new methodology was proposed while considering the limitations in the existing GEC'97 methodology and the best international practices. The proposed methodology is a trade-off between the best scientific techniques and its applicability on a countrywide scale. Salient features of the proposed methodology are highlighted below.

- A new term "**Exploitable Groundwater Resources**" has been introduced which is defined as the quantity of groundwater resources, which can be exploited for human needs. Many countries have formulated the policies defining exploitable groundwater resource which are mostly based on Safe Yield, Sustainable Yield and Planned Depletion approach.
- Proposed methodology should be based on Sustainable Yield Policy, which implies that exploitable quantity of groundwater resources would be equal to groundwater recharge minus natural groundwater discharge to the stream required to maintain the minimum flow (lean flow) in the stream.
- Assessment unit would be aquifer based, alternatively hydrologic unit like micro-watershed (hard rock), doab

(alluvium) and catchment area (hilly terrain). Separate assessment to be done for phreatic and confined aquifers.

- Assessment would be carried out in GIS based approach. The geographic unit of assessment of groundwater resources of the country would be aquifer with basic pre-requisite of establishment of physical disposition of the aquifer systems, characterization of individual aquifers and groundwater flow system occurring within the aquifer system.
- Proposed methodology, similar to GEC'97, is based on water balance approach. The following equation is a generalized form of water balance equation, which applies to any assessment unit. This water balance equation holds good for any part of the year and for the annual water balance as well.

$$\Delta S = R_{rainfall} + R_{other} - B - GE_{all} - ET \pm L \pm {}_{inflow/outflow} \cdots 1$$

Where

ΔS=Change in storage in groundwater reservoir

$R_{rainfall}$=Recharge from rainfall

R_{other}=Recharge from other sources

B = Baseflow

GE_{all}= Groundwater draft for all uses

ET= Evapo-transpiration losses

L=Leakage to or from deeper aquifers

$O_{inflow/outflow}$=Net inflow/outflow across the boundary of the assessment unit

The above equation can be rewritten as

$$\Delta S = R_{rainfall} + R_{other} - GE_{all} \pm V_{outnet} \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots 2$$

Where the new term introduced V_{outnet} is the net inflow/ outflow from the unit which is the resultant of base flow, evapo-transpiration losses, leakage from or to the deeper aquifers, net flow across the boundaries etc.

One of the major limitations of the existing methodology (GEC'97) is that in an attempt to simplify the water balance equation it completely ignores the net inflow/outflow term. A complete assessment of groundwater resources should include assessment of all the components of the above water balance equation no.1.

In hard rock area, the components like L and $O_{inflow/outflow}$ of eq.1 can be neglected depending on the judgment of the professional doing the assessment.

It has been recommended that minimum flow in the river should be considered for estimating exploitable groundwater resources.

The Stage of Exploitation (SOE) would be estimated and validated with the water level data.

A Significance Index has been introduced to check the reliability of the assessment. High significance has been set for micro-watershed wise assessment; high density of water level monitoring stations; availability of site specific field values and census data of abstraction structure with least error. This is very important for taking policy decisions and also for improving accuracy of resource estimates.

Categorization of assessment unit would be done for the purpose of groundwater resource management. Categorization would involve the following criteria – SOE, Extractability Factor (depending on average yield of wells), Temporal Availability Factor (based on dissipation rate during non-monsoon period) and Quality Factor.

Since there is a good correlation between well yield and transmissivity, the degree of Groundwater Accessibility is reflected in borehole yield distributions. Therefore 'well yield' can be used as an index of Groundwater Accessibility, which is termed as *Extractability Factor* (EF).

The total availability of groundwater resources in the phreatic aquifer would also be assessed incorporating Replenishable Resource and Instorage Resource.

Assessment of groundwater resources in confined aquifer involves estimation of groundwater storage under pressure condition and groundwater draft. GIS based classification is recommended to bring out spatial variation in groundwater condition in confined aquifer.

Simple Groundwater Budget Assessment Technique for major stakeholder – the Farmer

The phenomenon of local water users successfully managing their water resources has been observed in only a few areas. The erstwhile Planning Commission recommended that local planners take the following steps while planning for groundwater management:

- Determining the relationship between surface hydrological units such as watershed or river basins, and hydrological units below the ground such as aquifers;
- Identification of groundwater recharge areas;
- Maintaining groundwater balance at the level of the village or the watershed; and
- Creating regulatory options at the community level such as panchayat.

Andhra Pradesh Farmer Managed Groundwater Systems (APFAMGS) Project located in the southern part of India, is one such attempt. It tried to address the water management issue, from the viewpoint of demand through Participatory Hydrological Monitoring or PHM. The main aim of PHM activity was to enable the farmers to,

- Understand their present groundwater system;
- Understand the annual changes in their groundwater system;
- Regulate the use of groundwater.

The idea behind the project was that the farmer is in a better position than anybody else to take preventive measures and escape from consequences of the drought. Further, depletion of groundwater resource is best controlled by the users themselves. The role of scientists and administration, therefore, would be to empower

the people with useful skills to monitor and manage their own groundwater systems.

Under the PHM, farmers have been given training for delineation of Hydrological Units, preparation of base document for each Hydrological Unit, collection of hydrological data as per hydrological calendar, identification of over-exploited aquifer zones. Estimates of water balance for a particular hydrological unit is estimated using water balance approach. Farmers are imparted training to estimate various components of the Water Balance equation such as:

- Groundwater recharge (natural and artificial recharge)-training given on the recharge mechanism and the factors influencing the groundwater recharge, analysis of quantity of recharge Vs draft. Recharge rates are adopted as per GEC'97 norms.
- Estimation of groundwater draft and balance and its relation with recharge which helps in arriving at a conclusion regarding initiation of groundwater management activities.
- Estimation of groundwater balance (June to October) helps to decide the kind of crops to be grown in Rabi season based on the available water balance.
- Crop water requirement from November to May is critical to collect and estimate water requirement for crops planned during Rabi season. It is also useful to analyze the available groundwater balance and whether it would be sufficient for the forthcoming Rabi season.
- Estimation of recharge through projected rainfall (Nov – May) and recharge through secondary water bodies is done if the available groundwater balance is not sufficient to grow planned crops in Rabi season. Water stored in the tanks and wells will influence water levels of the bore well and water table. Recharge would be taking place through these water bodies. These have to be considered during estimation of projected water balance by the end of May.
- Crop Water Budgeting (CWB) is influenced by the groundwater balance and baseline data on cropping pattern. The Projects enabled the farmers to evolve a scientifically

sound and farmer-friendly allocation of water use for different purposes of which agriculture consumes more than 70% of the total water available. This was based on the outcome of the groundwater balance estimate, worked out in the previous step of the project. The effort was to match the annual groundwater balance (at the beginning of Rabi) with the groundwater draft for Rabi crop (during which the main irrigation source is groundwater). Groundwater need and allocation will be facilitated for each of the constituent villages based on the irrigable area and cropping pattern. The output of the crop-water budgeting is the crop-water use plans based on the groundwater estimation, farmer's choice of crop and soil conditions. Necessary linkages with groundwater department or other related department are built for initiating post-CWB strategies.

WAY FORWARD

For proper assessment of potential, present use and additional exploitability of water resources at optimal level, a water balance study is necessary. It has been reported that the groundwater resource estimation methodology recommended by Groundwater Resource Estimation Committee (1997) is being used by most of the organizations in India. Groundwater exploitation should be such that protection from depletion, protection from pollution is provided, negative ecological effects are reduced to a minimum and economic efficiency of exploitation is attained. Determination of exploitable resources should be based upon hydrological investigations. These investigations logically necessitate use of a mathematical model of groundwater system for analyzing and solving the problems. The study of water balance is a prerequisite for groundwater modelling.

It has been experienced that a clearer understanding of the state of aquifers in India will help in their management and governance at the local level. The Planning Commission Working Group on Sustainable Groundwater Management made the following recommendations to improve assessment:

- Strengthening the database management by central and state

governments;

- Adopting alternative techniques for recharge assessment where the estimates do not match the situation on the field;
- Mapping aquifers effectively for a complete assessment of groundwater resources.

Following these recommendations, the CGWB in 2012 started the National Project on Aquifer Management (NAQUIM) to identify and map aquifers, and quantify the available groundwater potential. This project highlighted the need for a shift in groundwater sector from development to management. It aims to increase groundwater resource management by (i) identifying and mapping aquifers, (ii) quantifying the available groundwater potential, and (iii) proposing plans appropriate to the scale of demand, aquifer characteristics and the institutional arrangements for management. In order to establish a methodology for NAQUIM, the CGWB has completed pilot study in six areas in different hydrogeological terrains. These areas are in the states of Bihar, Karnataka, Maharashtra, Rajasthan (2) and Tamil Nadu.

The Safe Yield and Sustainable Yield policies are based on environmental considerations. The transition from Safe Yield to Sustainable Yield would be possible only if adequate and firm database is available on aquifer-surface water body interaction. Planned Depletion policy on the other hand is biased towards human demand considerations. Planned Depletion is followed by Zero Depletion Policy. Therefore, this policy can be implemented only in areas where strong control over groundwater extraction exists.

The methods and techniques discussed in this paper have their own advantages and limitations. None of the methods described above has a clear-cut advantage over other techniques. They differ in their applicability mostly in terms of estimated recharge rates, areas and time periods the estimates represent. Hence, it is recommended to use more than one method for recharge estimation like Water Level Fluctuation, Soil Moisture Balance, Chloride Mass Balance, tracer techniques etc. Numerical Modelling is the preferred method provided data at acceptable level of significance is available. However,

while attempting a country-wide estimation, it is preferable to adopt one particular technique as the core method which enables uniformity in assessment and comparison amongst assessment units within the country. Wherever there is a contradiction between estimation results and field situation, the recharge estimates need to be cross-checked with other techniques. The data elements required for estimation need to be standardized so as to know the significance level of the estimation.

In light of the international best practices as discussed above, the following three major interventions are recommended to improve the process of groundwater resource estimation in India.

Intensive field investigations involving advanced tools and techniques is the strength of resource assessment. It is recommended to promote R&D studies on groundwater resource estimation in different parts of the country. To boost R&D studies, it is recommended to set up groundwater recharge assessment laboratories in all the states. The laboratories should be equipped to carry out experiments related to (at least) three studies *viz.* Soil Moisture Studies; Chloride Mass Balance and Tritium Injection studies. These studies would be aimed at producing factors, parameters, empirical relations and overall understanding of groundwater dynamics. These in turn will provide generic datasets, which can be used for rapid and realistic country wide assessment.

In the entire process of groundwater resource assessment and groundwater management, estimation of groundwater draft is the most important component. Ironically, it is the weakest link in groundwater resource assessment in India and elsewhere. As discussed above, in many countries like Australia, USA, Korea, Taiwan etc. abstraction structures are registered and groundwater draft is metered. It is recommended to initiate direct metering of groundwater draft in select irrigation and domestic wells and in all wells established for industrial purpose. Enforcing fitting of water meters and recording draft in all government funded wells could be a feasible option. The unit drafts obtained from these sample surveys can be used to assess groundwater draft.

It is recommended to create a GIS based village wise database of all

primary information and data related to estimation of groundwater resources. It is also recommended to carry out the estimations on a GIS platform. The final output is recommended to be depicted on maps and should be accessible using web based interactive tools.

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R.D. Singh and Rajan Nair

Planning and Management of Water Resources

INTRODUCTION

Water is nectar of life, without which life is not possible on our planet. History has witnessed development of civilization around areas having abundant source of water. The increasing gap between the available fresh water and its demand due to population growth, change in the life style, industrialization and climate change, has been a great concern for all of us, and it is going to be one of the important issues for ecologically sustainable and economically viable growth of the country. As water is becoming scarce commodity, its preservation and conservation has become the most important aspect in relation to integrated water resources development planning. An integrated approach implies the use of a dynamic, interactive, iterative and multi-disciplinary approach to water resources management and advocates the integration of inter-sectoral water plans and programmes. Possession information in its various forms can link individuals to the mainstream of knowledge and culture or its absence may relegate them to lives of ignorance and toil for little gain and makes the imposition and maintenance of authoritarian regimes all the more possible. Sharing hydrological data and information enables people to think together in solving problems, to build trust, and avoid conflict. Furthermore, cooperative data collection and sharing prevents unnecessary duplication and reduces costs for all involved parties.

DATA SHARING

Sharing the hydrological data and information enables people to think together in solving the various hydrological and water management related problems, in building trust essential for cooperative efforts

toward sustaining shared vital natural resources, and in avoiding interstate conflict. All planning and policy making success depend on timely dissemination of accurate water related data and information to all who need it, from farmers to heads of state. Need for cooperation and sharing of water resources data and information are acute if the water source is to be managed, distributed, and used equitably and efficiently by the different stake holders. Many a times, the collection, management, reporting, and quality of water and environmental data are often so poor and incomplete as to render them useless, or they are treated as security issues and are therefore classified. Wherever such conditions exist, essential planning and policy data and information of good quality are relatively hard to gather. When the hydrometeorology information is not well gathered or efficiently processed and shared among those who need it, the problems of management and planning are made more difficult. The collection and sharing of data have their own requisites if their potential is to be fully realized:

- Adoption of data collection standards
- Quality assurance for maintaining data collection standards
- Standardization of measurements, tenns, and definitions
- Data comparability and consistency
- Maintenance of long-term (historical) data records
- Proper documentation, and collection of ancillary data
- Good processing, storage, and distribution (easy access and flow)
- Good staff training and water and air quality analysis services
- Research to improve data gathering technologies
- Data sharing requires:
    - data of known quality
    - data monitoring
    - data types and quality that are comparable over time
    - availability and accessibility of data

- computerized databases with appropriate software to store, organize, and move data.

There are many regions of the world where water-resource data is considered to be a security issue and is therefore classified to prevent its being shared. Sometimes the barrier to sharing is sheer bureaucratic inertia and inefficiency, and sometimes it is cultural attitudes that discourage sharing information because sharing could open a society to influences that are perceived to be corrupting (Naff, 1999).

Novel and more affordable technologies are allowing new actors to engage increasingly in the assessment of water resources. This trend may shift data collection from a small number of mostly formal institutions (e.g., State and Central water resources authorities) toward a much more dynamic, decentralized, and diverse network of data collectors (including private citizens). Such a move toward a more diverse collection and monitoring may have important consequences for the generation of knowledge about water resources and the way that this knowledge is used to govern these resources. An increasingly multi-pronged approach to monitoring and data collection will change inevitably the relation between monitoring and decision-making for water resources. On a technical level, it may lead to improve availability of data. Furthermore, the opportunity for players to design and implement monitoring may lead to data collection strategies that are tailored better to locally specific management questions. However, in a policy context the evolution may also shift balances of knowledge and power. For example, it will be easier to collect data and generate evidence to support specific agendas, or for private citizens to challenge existing agreements, laws, and statutory authorities. Multi-pronged approaches (Polycentric models (Ostrom 2010)) recognize the existence of multiple centres of decision-making within a catchment and provide a potential alternative to the top-down centralizing tendencies of integrated water resources management which are often plagued with data scarcity.

GLOBAL WATER DATA ACCESS POLICIES

The ultimate goal of data collection in hydrology, be it precipitation

measurements, water-level recordings, discharge gauging, groundwater monitoring or water quality sampling, is to provide a set of sufficiently good quality data that can be used in decision-making in all aspects of water resources management, in a wide range of operational applications as well as in research. Decisions may be made directly from raw data measurements or based on derived statistics or on the results of many stages of modelling beyond the raw data stage, but it is the collected data that form the basis for these decisions. Data sets are of great intrinsic value as they are collected through a huge commitment of human and financial resources and often during a long period of time, and they acquire additional and sometimes unexpected value when they are made available in an accessible format meeting users' specific needs.

The management of hydrological data is therefore important work in itself and this work must be performed effectively in order to maximize the return on investments made in its collection and to realise its potential for effective and efficient use. In 2005, a report from the Global Climate Observing System (GCOS) on data exchange problems in global hydrological and atmospheric networks identified standards as a key issue. The report stated that: "There are no established international standards on the acquisition of river data, the set of required metadata, data formats, and transmission modes".

These include the exchange of data relating to:

- In situ observations at hydrological (gauges, reservoirs) or climatological stations;
- Forecast products (probabilistic or deterministic timeseries) at forecast locations;
- Emergency or operator-oriented alerts (of threshold exceedance) and reports;
- Time series of planned intake and release/discharge; and
- Groundwater observations of water level within wells.

There are many system choices, including commercial off the shelf and open source software, which can be used for hydrological

data storage and management, some of which also now support OGC web services and data sharing. The importance of standards for Water observation data is fundamental to our understanding of water resources and their spatial and temporal variability. Water resource management within countries, regions and continents around the world is highly distributed with many organisations typically involved in the collection and management of water data, even within single countries. In addition, geographic features such as river basins and aquifers generally do not align with the boundaries of nation states and 90% of people live in countries that share transboundary hydrological features with their neighbours. As a result, to understand water resources within basins or aquifers, hydrological data sharing both within and between countries is usually required.

Content and format standards for water data exchange are a fundamental requirement to deal with the complexity which arises when disparate data from different organisations are brought together. The need for exchange of water observations data operates at many different levels, from sharing across international borders to inter- and intra-agency sharing within individual countries.

Development of community-agreed consistent models and exchange formats for spatial and temporal data and metadata increases interoperability between information systems. It has many practical benefits including:

- Improved efficiency and quality of information models and systems;
- Wider use and re-use of information;
- Vendor and open source support at low or no cost to users; and
- New value to existing information through serendipitous uses.

A number of protocols are seen world-wide (Australia, New Zealand, USA, China and others) which have some differences and are yet to be fully interchangeable; however these can be taken and used in the Indian context to make them user friendly and locally adaptive.

DATA AVAILABILITY IN INDIAN CONTEXT

Central Water Commission (CWC) has contributed substantially in collection of hydrological data all over the country. Being the apex national body for the development of surface water resources of the country, the Central Water Commission has established a network of hydrological observation stations in all the river basins. Hydro-meteorological sites (HMS) of CWC are stations responsible for the collection of hydrological, meteorological and water quality parameters.

From some such stations, the data is reported once a day while others report it on twice daily or four times a day basis. So, data availability is as:

- Data for each of the observed parameter reported once in a day at 0830 hrs (daily climatic data)
- Data for each of the observed parameter reported twice a day at 0830 and 1730 hrs. (twice-daily climatic data)
- Hourly Rainfall, Temperature, Humidity and Pressure Data observed by autographic rain gauge, thermograph, hygrograph and barograph respectively and
- Hourly Sunshine duration data observed using sunshine recorder

Currently there are 901 HMS maintained by CWC. Within 901, the type of site distribution includes: 279 Gauge (G); 160 Gauge and Discharge (GD); 124 GD and Water Quality(Q); 31 GD and Silt (S); 229 GDSQ; 44 GQ; 01 Q; 23 Rainfall only and 10 Snow measuring stations maintained and operated by CWC.

HMS AND SURFACE WATER DATA ENTRY SYSTEM DATABASE OF CWC

The database is primarily oriented towards easy and reliable data entry options for various hydro-meteorological quality and quantity variables. It organises the data into well-defined databases using concept of relational database systems. The main features of the database are highlighted as given below.

- **Organised Databases:** The data pertaining to different

sub-basins or offices or periods can be organised in separate databases (referred as Work areas in the database) in a well-organised and methodical way.

- **Master Information:** The database maintains a set of important hierarchical information on administrative and drainage boundaries and that on the offices controlling various observation stations. Adequate facility is available in the system to extend or modify this type of information. This information provides a linkage between station code and all other information generated for that station present in different tables.
- **Static/semi-static Data:** The database provides for the entry of necessary characteristics associated with the observation stations as static and semi static data. The data pertaining to various variables is stored under well-defined data series, which also have useful characteristics, associated with them. The data on current meters and setting of the zero of the gauge for different validity periods, cross sectional profiles etc. are also stored in an organized manner.

Master Information of HMS Database

The database maintains a set of important information on data types, administrative and drainage boundaries and that of the owner agency and various HIS offices at which the data from an observation station is processed. A number of variables are observed with the help of hydrological and meteorological network at several locations. It is also very important to note certain key characteristics of these variables. Characteristics like description, unit and type of measurement of the variables are also maintained. It maintains information and attributes which further links to data containing tables. Four fields required for defining a data type are explained below:

- **Parameter ID**: Parameter identification code is a three character code used to uniquely define any parameter.
- **Description:** Full description of the variable is given for explaining its exact meaning.

- **Units of measurement:** Every parameter is characterised with the units of measurement.
- **Types of measurement:** Measurement of various variables are either accumulative, instantaneous or constant in nature and are indicated in the code assigned to the parameter.

There are a few State agencies and three central agencies, which are primarily responsible for maintaining various hydrological and meteorological observation stations. All the States have one surface water and one groundwater organization as the lead agency engaged in data collection besides a few other organizations like Revenue, Agricultural, Hydro-electric and Pollution departments which have limited mandate. Central agencies like Central Water Commission, Central Ground Water Board and India Meteorological Department play a vital role in collection and dissemination of data. The hierarchical record of the information on these agencies and offices is maintained in the database. It is very essential to maintain reference of various agencies and offices that control the activities and functioning of observation stations.

REAL TIME DATA AVAILABILITY AND ITS QUALITY

Telemetry-enabled loggers offer an affordable and easy to operate solution without the need for expensive telemetry IT infrastructure. The telemetry loggers at outstations transmit data by a variety of possible modem options:

- Public Switched Telephone Network (PSTN) i.e. land lines
- Global System for Mobile communications (GSM)
- General Packet Radio System (GPRS)
- Satellite LOE (Low Earth Orbit) Iridium network

IMD has been working on the GSM/GPRS system for data collection and transmission and have reported satisfaction. CWC uses the LOE for flood warning and have found the systems robust. After the field stations have sent their data via GSM/GPRS or LOE to the data server, the data can be transferred to other applications or databases for further processing. At present the web software enables only the Implementing Agency to view and edit the data;

to disseminate the data more widely they have to be loaded to the Agency's own website.

There are several issues that need to be considered when adopting a GSM/GPRS based telemetry system for data acquisitions and a semi-automatic web-based dissemination system, not least the implications for data validation. It is possible for most systems to have some form of automatic preliminary data validation which identifies major transmission errors and anomalous data, and it would be possible to make these "raw" data available to some users at this stage, albeit with a qualification. Preliminary data validation will alert the Agency to any problems with instruments, enabling them to better distribute resources and prioritise site visits for routine maintenance teams. However, it is imperative that further validation is carried out, and quality controlled dataset made available, as soon as possible.

To display river flow or reservoir volume data automatically, the water level data would have to be converted using a rating equation or rating table (stage-discharge relationship). Therefore, it is important that Implementing Agencies develop these ratings and, for rivers, periodically check them through regular discharge measurements using current meters, ADCPs or other methods. There seems to be a reluctance by some of the States to do this. Constraints over data accessibility may prevent data being disseminated directly via the web, though perhaps gauge level data (but not final discharge data) might be possible in the future. Issues such as this clearly need to be clarified and resolved.

Another key issue is the design and content of any public website disseminating data. In is important to be aware who the main and/or intended audience is and what they would like to see on the website i.e. the data coverage, periodicity and timeliness, the data integrity, the data quality, and the suitability of the data for the audience. Different levels of data may be accessible to different levels of user via user names and passwords, with the highest level users being able to download data. There are readily available tools for registering the number of visitors to the website and the pages most visited, and these statistics should be collected. Since several, if not all, Implementing Agencies may wish to disseminate their

data via the internet, it would seem sensible for them to minimise the specification and design work by adopting common webpages reproduced on each State's website, or even a common website, rather than developing them in isolation. This would improve the audience's access to the information and services, strengthen the quality of the content, and provide cost and efficiency savings to the Agencies. The Agencies must also make a commitment to maintain and update their websites as often as required, and fund the technical and staff resources needed to do this. Another main issue is the classification of data as "SECRET" so web dissemination may hit a road block in those cases (for example the data pertaining to Ganga, Indus and Brahmaputra rivers)

NEED FOR THE DATA TO BE IN PUBLIC DOMAIN

Computation of runoff from river catchments is required for different purposes. Information on river flow is needed to optimally operate downstream irrigation and hydropower reservoirs. Often river flood forecast is the main component of flood early warning systems, whereby flood damages can substantially be reduced if a high flood is forecasted well in advance. However, in many situations, the river catchments are located across country borders. Often data sharing protocols are not in place (e.g., Nile basin countries), and rainfall runoff computation become impossible with limited single country ground station data. This is true in India also where the rivers cross a number of states and data sharing is difficult.

In many catchments, the density of rainfall stations is very sparse to obtain reliable areal rainfall estimates. In such cases, public domain datasets, monitored through remote sensing techniques can be an effective replacement. Fortunately, rainfall measurement by remote sensing techniques has attained major advancements during last decades. The quality of data -both accuracy and resolution (spatial and temporal) has improved considerably. Most of the data is available free of charge in the internet. The linking of discharge and rainfall data would be possible when spatial data becomes available to larger audience.

CONCLUDING REMARKS

Presently the country is facing a major challenge to meet the growing demand for water in various sectors such as agriculture, industry and drinking water and to maintain sustainability of the resource base. In an era of institutional transformation in the water sector, an analysis of the water sharing policy and water governance process is required. Reforms in the area of governance are indeed very necessary. However, if we consider any 'water governance' issue carefully, we will find ourselves led beyond governance in a narrow sense into larger issues, and beyond the sphere of governments into the domains of water users, private sector agencies, and civil society (Iyer, 2007).

- Water and other vital resources are such pervasive public and scientific issues that it is impossible to keep their data secret for very long. Water is involved in virtually all developmental projects and economic planning, in industrial and agricultural processes, in foreign and technological aid, and in energy. Although the information and development are interdependent yet there cannot be effective development without sufficient quality information. Much of the information and data related to water and the enviromnent are not country or region specific. Therefore, in order to meet the growing challenges in the water sector following actions may be immediately considered:
- Plan and develop programs and projects that would demonstrate to policy formulators, decision-makers, technocrats, and the public the advantages of continuous quality data collection and good information services together with distribution and sharing of that data to all end users.
- Promote the exchange of data on both international and domestic levels by the provision of grants to selected institutions for the creation and maintenance of widely accessible Internet Homepages.
- Plan and develop programs and projects that would demonstrate to policy formulators, decision makers,

technocrats, and the public the advantages of continuous quality data collection and good information services together with the distribution and sharing of that data to all end-users.

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Vivek K. Agnihotri

Judicial Accountability:

Impeachment of a Judge of The Higher Judiciary[1]

Shri Wansuk Syiem and 57 other MPs of the Rajya Sabha had submitted a motion in March 2015 to the Chairman of the Rajya Sabha, Hon'ble Mr. Hamid Ansari, seeking removal of Justice S. K. Gangele, a sitting judge of the Madhya Pradesh High Court. He has been accused of sexual harassment by a female Additional District and Sessions Judge in Gwalior, who has since resigned. The Chairman, Rajya Sabha, after admitting the motion, appointed a three-member Committee, headed by Justice Vikramjit Sen, a sitting judge of the Supreme Court, to inquire into the allegations brought in. The other two members of the Committee were Justice Manjula Chellur, Chief Justice of the Calcutta High Court and jurist K. K. Venugopal. The report of the Committee is still awaited.

Impeachment of a judge is not a singularity, but is still a rarity in India. However, in recent times, it has happened thrice in fairly quick succession (2009, 2010 and in 2015). Justice V. Ramaswami, Justice of the Supreme Court of India was the first judge, since coming into force of the Constitution of Independent India, against whom impeachment proceedings were initiated in 1991. The other two judges to face impeachment proceedings earlier were Justice Soumitra Sen of Calcutta High Court, and Justice P. D. Dinakaran, the Chief Justice of the Karnataka High Court, proceedings against whom were initiated in Rajya Sabha in 2009 and 2010, respectively. But it needs to be noted that the Constitution of India, which lays down the procedure for removal of the judges of the Supreme Court and the High Courts, does not mention the word 'impeachment' anywhere.

[1]An earlier version of this article has been published in *The Parliamentarian*.

In the case of Justice V. Ramaswami, the motion moved in the Lok Sabha failed in 1993, since it did not get the requisite majority of two-thirds of the members of that House, present and voting; a rare case of bonhomie between the executive and the judiciary. In the case of Justice Soumitra Sen, the judge submitted his resignation to the President on 1 September 2011, after the motion had been adopted by the Rajya Sabha but before it could be taken up in the Lok Sabha. As far as Justice P. D. Dinakaran is concerned, he resigned in July 2011, before the Inquiry Committee constituted to look into the allegations levelled against him could complete its work. On 4 August 2011, Justice Dinakaran had a "change of heart" and wrote to the law ministry seeking to withdraw his resignation. But the ministry rejected his request. However, his resignation did manage to scuttle the probe against him.

What then is the procedure for removal of a judge of the Supreme Court or a High Court in India? Article 124 of the Constitution of India states as follows:

> Clause (4): "A Judge of the Supreme Court shall not be removed from his office except by an order of the President passed after an address by each House of Parliament supported by a majority of the total membership of that House and by a majority of not less than two thirds of the members of that House present and voting has been presented to the President in the same session for such removal on the ground of proved misbehaviour or incapacity."
>
> Clause (5): "Parliament may by law regulate the procedure for the presentation of an address and for the investigation and proof of the misbehaviour or incapacity of a Judge under clause (4)."
>
> As regards the Judges of the High Courts, Article 217 (1) (b) provides:
>
> "A Judge may be removed from his office by the President in the manner provided in clause (4) of Article 124 for the removal of a Judge of the Supreme Court".

Further, in terms of clause (5) of article 124, the Parliament passed

the Judges (Inquiry) Act, 1968, which was followed up with the Judges (Inquiry) Rules, 1969 by the Government.

In consonance with the statutory provisions mentioned above, in simple terms, the procedure for removal of a judge, either of the Supreme Court or the High Court, normally comprises following steps:

1. A notice of motion for removal of the judge is given by the MPs (at least 50 in case of the Rajya Sabha and 100 in case of the Lok Sabha).
2. If the Motion is admitted by the Presiding Officer (Chairman / Speaker) of the concerned House, a three-member Inquiry Committee is constituted in consultation with the Chief Justice of India (in respect of the serving members of the Higher Judiciary), comprising a judge of the Supreme Court and a Chief Justice of High Court) and an eminent jurist nominated by the Presiding Officer (the Chairman of Rajya Sabha or the Speaker of the Lok Sabha, as the case may be).
3. The Committee prepares the draft charges, a draft statement of grounds (imputations) and communicates them to the impugned judge.
4. The Committee issues a statutory notice to the impugned judge to appear before it either in person or through an advocate.
5. After giving the impugned judge an opportunity to present his / her case, the Committee prepares and presents its Inquiry Report, along with copies of the evidence tendered before it, to the concerned Presiding Officer.
6. Copy of the Report is laid on the table of the two Houses, simultaneously.
7. A copy of the Report, along with all other documents, is forwarded to the impugned judge seeking his reply thereon.
8. A reply is received from the impugned judge.
9. The impugned judge is invited to appear first before the

House, the Members of which had given the motion for his removal.

10. With the approval of the concerned Presiding Officer, a Bulletin is issued by the secretariat regarding admittance of motion for consideration of the Report of the Enquiry Committee.
11. The motion is included in the List of Business of the House.
12. The House considers the motion and the Address to the President prepared in pursuance of Clause (4) of Article 124 of the Constitution of India.
13. The motion and the Address are either adopted or rejected by the House.
14. If the motion and the Address are carried in the first House, they are *mutatis mutandis* considered for adoption by the other House.
15. The removal of the judge, in the form of the Address[2], is recommended to the President of India, if it is adopted by both the Houses with the requisite majority of the total membership of the House and by a majority of not less than two thirds of the members of that House present and voting. The procedure is similar to the adoption of an amendment to the Constitution of India.

As an illustration, the Table below provides the chronology of events in respect of the removal of Justice Soumitra Sen.

TABLE: Chronology of Events in Justice Soumitra Sen's Case

Sl. No.	Event	Date
1	Notice of Motion given by Mr. Sitaram Yechuri and 56 other MPs of Rajya Sabha	20.02.2009
2	Admission of Motion by Chairman, Rajya Sabha	27.02.2009

[2]The 'Address' is a formal request by the Parliament to the President of India to pass an order for the removal of the impugned judge.

Sl. No.	Event	Date
3	Date of Constitution of Enquiry Committee by Chairman, Rajya Sabha and its notification in the official gazette[3]	20.03.2009
4	First reconstitution of the Committee due to resignation of a member (Justice of the Supreme Court) and his replacement by another Justice of the Supreme Court	25.06.2009
5	Second reconstitution of the Enquiry Committee due to elevation of a member (Chief Justice of a High Court) as Justice of the Supreme Court and his replacement by another Chief Justice of a High Court	16.12.2009
6	Forwarding of draft charges and draft statement of imputations to Justice Soumitra Sen	05.02.2010
7	Issue of Statutory notice by the Committee to Justice Soumitra Sen	04.03.2010
8	Presentation of Report by the Committee to Chairman, Rajya Sabha	10.09.2010[4]
9	Laying of the Report, along with the evidence tendered and exhibits, on the tables of Rajya Sabha and Lok Sabha and making it available to the Members of both the Houses of Parliament through the publication counter	10.11.2010[5]
10	Forwarding of a copy of the Report to Justice Soumitra Sen	11.11.2010
11	Reply of Justice Soumitra Sen on findings of the Report[6]	18.01.2011
12	The reply of Justice Soumitra Sen was made available to the Members of both the Houses of Parliament through the publication counter[7]	21.02.2011

[3]It required several consultations with the Chief Justice of the Supreme Court.

[4]According to the Judges (Inquiry) Rules, 1969, the Committee was required to submit its Report within 3 months of its constitution. However, the Committee sought two extensions, giving it time up to 05.10.2010 to submit its Report.

[5]The Report was required to be translated in Hindi before laying it on the Tables of the two Houses of Parliament.

[6]Justice Soumitra Sen was also given an opportunity earlier to present his case to the Committee on the draft charges framed by the Committee.

[7]This too required translation in Hindi, before duplication and circulation.

Sl. No.	Event	Date
13	Letter sent to Justice Soumitra Sen to appear before the Rajya Sabha	09.08.2011[8]
14	Issue of Bulletin of Rajya Sabha regarding admittance of the Motion for consideration of the Report of the Enquiry Committee	11.08.2011
15	Issue of items for the List of Business for 17 August 2011	12.08.2011
16	Consideration of the Motion and the Address to the President of India by the Rajya Sabha	17-18.08.2011
17	Adoption of Motion and the Address by the Rajya Sabha by 189 members voting in favour and 16 against	18.08.2011
18	Justice Soumitra Sen tendered his resignation to the President of India	01.09.2011
19	Listing of Motions and the Address in the Lok Sabha[9]	05.09.2011

The Constitution of India upholds the independence of the judiciary by ensuring a security of tenure. That is why, as mentioned above, a judge of the Supreme Court or the High Court cannot be removed from office except through an elaborate procedure prescribed by the Constitution, the Judges (Inquiry) Act, 1968 and the Rules framed thereunder. Moreover, the Parliament is not empowered to discuss the conduct of any judge of the Supreme Court or the High Court in the discharge of his duties except in terms of the procedure prescribed for his removal. The higher judiciary has adequately protected not only against the vagaries of Parliament but also of the executive through a system of appointment of the judges, by a committee of their own brethren. But it does not provide for their accountability as is the case in several western democracies. There is no mechanism at present to make judges accountable or to evaluate

[8]The delay was partly due to the fact the Indian Parliament was preoccupied with the passage of the annual budget; and partly due to the fact it does not sit continuously and has a break a of about two months between the Budget Session (February-May) and the Monson Session (July-August).

[9]The Motion was not taken up for consideration in view of resignation submitted by Justice Soumitra Sen.

their performance. While judicial independence is indeed a part of the basic structure of the Constitution, it cannot be the ultimate goal of the judicial system *per se*.

A spate of cases of so-called impeachment of judges in recent times, particularly the Justice P. D. Dinakaran case, led to a collateral institutional damage. A doubt was raised against the robustness of existing system of selection and appointment of justices of the High Court and the Supreme Court, popularly known as the 'Collegium System', which appoints judges to the nation's constitutional courts, under which the Chief Justice of India and a forum of four senior-most judges of the Supreme Court recommend appointments and transfers of judges. This System had its genesis in, three of its own judgments which are collectively known as the 'Three Judges Cases', viz. (1) S. P. Gupta v. Union of India - 1981 (also known as the Judges' Transfer case); (2) Supreme Court Advocates-on Record Association versus Union of India, 1993; and (3) *In re* Special Reference 1 of 1998.

The Third Judges Case of 1998 is not actually a case but an opinion rendered by the Supreme Court of India responding to a question of law regarding the Collegium System, raised by then President of India K. R. Narayanan, in July 1998 under his constitutional powers. The Collegium System has been in use since the judgment in the Second Judges Case was delivered in 1993. Over the course of the three cases, the court evolved and further refined the principle of judicial independence to mean that no other branch of the state - including the legislature and the executive - would have any say in the appointment of judges. Further, in January 2013, the court dismissed as without *locus standi*, public interest litigation filed by an NGO (Suraz India Trust) that sought to challenge the Collegium System of appointment of superior judiciary. In July 2013, the then Chief Justice of India spoke against any attempts to change the Collegium System.

However, it must be noted that there is no mention of the Collegium either in the original Constitution of India or in its subsequent amendments. Although the creation of the Collegium System was viewed as controversial by legal scholars and jurists outside India,

her citizens, the Parliament and the Executive, did little to replace it. The Union Government has since criticised it saying that it has created an *imperium in imperio* (empire within an empire) within the Supreme Court.

Several considerations, buttressed no doubt by a succession of cases of misdemeanor on the part of certain judges perhaps, led to amendment of the Constitution of India through the ninety-ninth constitutional amendment, namely the Constitution (Ninety-Ninth Amendment) Act, 2014 and passage of the National Judicial Appointments Commission (NJAC for short) Act, 2014 to regulate the functions of the National Judicial Appointments Commission, and on their ratification by 16 of the state legislatures in India, and subsequently assented by the President of India on 31 December 2014. The NJAC Act and the Constitutional Amendment Act came into force with effect from 13 April 2015.

The NJAC would consist of six members — the Chief Justice of India, the two seniormost judges of the Supreme Court, the Law Minister, and two 'eminent persons'. These eminent persons are to be nominated for a three-year term by a committee consisting of the Chief Justice, the Prime Minister, and the Leader of the Opposition in the Lok Sabha, and are not eligible for re-nomination. The judiciary representatives in the NJAC -- the Chief Justice and two seniormost judges – can veto any name proposed for appointment to a judicial post if they do not approve of it. Once a proposal is vetoed, it cannot be revived. At the same time, the judges require the support of other members of the Commission to get a name through. The NJAC would have replaced the Collegium System for the appointment of judges.

However, on 16 October 2015 the Supreme Court upheld the Collegium System and struck down the NJAC as unconstitutional after hearing the petitions filed by several persons and bodies, with Supreme Court Advocates on Record Association being the first and lead petitioner. By a majority opinion of 4:1, the Supreme Court of India struck down the constitutional amendment and the NJAC Act, thereby restoring the two-decade old Collegium System of 'judges appointing judges' to higher judiciary. Supreme Court

declared that NJAC is tantamount to encroachment on the autonomy of the judiciary by the executive, which amounts to tampering with the Constitution of India under which the Parliament of India is not empowered to change its Basic Structure. However, Supreme Court acknowledged that the Collegium System of judges appointing judges is lacking in transparency and credibility, which requires rectification / improvement by the Judiciary. On November 3, 2015 the Supreme Court pronounced that it is open to bringing greater transparency in the Collegium System within the following existing four parameters:

- How the Collegium can be made more transparent.
- The fixing of the eligibility criteria for a person to be considered suitable for appointment as a judge.
- A process to receive and deal with complaints against judges without compromising on judicial independence.
- Debate on whether a separate secretariat is required, and if so, its functioning, composition and powers.

Following an invitation from the Supreme Court of India to the general public to send proposals to improve the 'opaque' Collegium System, a large number of suggestions (close to 3000 by the closing date) were received for reforming the system, including an examination, followed by an interview, to select the judges, as is in vogue for lower judiciary. A majority of suggestions related to qualification and quality of judges. Other proposals include appointment of eminent jurists and scholars as judges; a quota for women, scheduled castes and scheduled tribes (but not for other backward classes and minorities); asking the person proposed to be appointed as a justice of the High / Supreme Court to disclose whether he is a relative of a serving judge of the Supreme Court or a member of a political party; a permanent secretariat for the Collegium; sending the proceedings of the Collegium to the national archives after 30 years; subjecting the minutes the Collegium meetings to the Right of Information Act; and publishing an annual report on appointments made by the Collegium; among others.

Following several rounds of discussion, spread over more than a

year (2016-17), between the government and the judiciary on the draft Memorandum of Procedure (MoP) for appointments in the higher judiciary through the Collegium System, the Supreme Court is reported to have finally handed over its version of MoP in March 2017. Deliberations are still underway as certain issues have yet to be worked out. The contentious point in the Supreme Court version is that in the event of the government rejecting the recommendation of the Collegium on the grounds of national security and public interest, the Supreme Court shall have the final say. The Supreme Court, allegedly, also wants the government to spell out the reasons for taking objection on these grounds. The government's recommendation for setting up of secretariats in the Supreme Court and 24 High Courts to assist the respective collegiums has apparently been accepted. However, the suggestion for committees of retired or sitting judges to assist the collegiums in finding suitable candidates appears not to have been accepted.However, whether there is any correlation between the method of selection of the members of the higher judiciary and their future conduct, occasionally leading to their so-called 'impeachment', only time will tell.

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Prabhat Kumar

Whither MSMEs

All over the world, Micro, Small and Medium Enterprises (MSMEs) are the economic and employment backbone of thriving and developing economies. They are widely considered as the main sources of entrepreneurship and veritable crucibles of innovation. A major contribution to the country's economy comes from value-addition, an activity MSMEs excel in. Apart from agriculture, almost entire employment generation in the economy is created in the MSME sector with more than 90% employment being accounted for by micro enterprises.

The true impact of MSMEs must be judged from the percentage of population touched by them rather than the size of their turnover. Therefore, MSMEs should be considered as the indicators of the nation's future economic growth potential. For example, a new knowledge intensive growth model has already emerged in the small sector, which has the potential to grow to greater strengths in the next decade.

MSMEs are also important for fostering and strengthening our innovation potential. They are not only a catalyst for new ideas to breed, but also for pushing new ideas into the market. MSMEs have unique flexibility to adapt to new market conditions and are open to emerging ideas supported by information technologies.

The government should take a new look at policies to reap the advantages of a growing young entrepreneurial class. This new born class should be encouraged to become the drivers of economic growth that will have the potential to pull the marginalized people of India out of poverty.

It is this group of entrepreneurs that will make the next wave

of massive employment and value addition a reality in India. The intricate linking of micro, small and medium enterprises, its interconnectedness to large industries as one unbroken value chain is therefore crucial for India.

In his book 'The Fortune at the Bottom of the Pyramid', C K Prahalad says, " if we stop thinking of the poor as victims or as burden and start recognizing them as resilient and creative entrepreneurs and value conscious consumers, a whole new world of opportunity will open up." He goes on to say that the large-scale and wide-spread entrepreneurship is at the heart of the solution to poverty.

It is not really necessary to do excessively sophisticated research in thinking about the MSME sector. The broad facts about the sector stare us in the eye. These enterprises are everywhere around us. They take birth, grow, face obstacles, overcome them and prosper. Sometimes they die too. For us, it is important that the small entrepreneurs win their struggle.

Packages of programmes and schemes have been introduced from time to time by successive governments. The recommendations of various committees on the subject have been implemented piecemeal but not in a holistic manner. We think it is the time to pause and consider the policy environment in totality and then to initiate the process of developing a synergistic ecosystem. The synergistic eco system should combine the activities of the Central ministries and agencies dealing with any aspect of MSMEs, the state governments, specialized institutions promoting the sector as well as private organizations.

The Prime Minister says that in order to face the challenges of the future, the country will have to embark on 'rapid transformation' instead of 'incremental progresses'. The same applies to the policy for the MSMEs.

There are various traps in which MSMEs find themselves; start up trap, credit trap, technology trap, marketing trap, even exit trap. To craft a new policy about MSMEs with fresh ideas is tough. But it is possible, as I learned while looking around. The main concerns are:

Changing mindset of the institutional stakeholders, honouring the entrepreneurship spirit and restoring the dignity of entrepreneurship should be the guiding mantra of our MSME policy. I feel that as a nation, we have not been able to give the respect to our entrepreneurs, which they rightfully deserve. The state establishment needs to develop an 'I care' syndrome in supporting and servicing the enterprises. It should be appreciated that there is a range of 'possible futures' for the youth, but the entrepreneurial route is the most exciting and challenging of all possible futures. The young woman or young man who chooses the enterprise path needs all the support and encouragement from state, financial and other agencies.

What is, therefore, essential is to bring about a change in the mindset of the functionaries of different public institutions at various levels; and this includes the staff of the banks and financial institutions too. The mindset of the functionaries of various institutions including the MSME-DIs, DICs, autonomous institutions, banks and financial institutions can be modified largely by training and reorientation. In addition, the dignity of the entrepreneur can be enhanced by making the systems more right based and entitlement based eliminating the subjective human element. For instance, the banking system can introduce common application for all scheduled banks, have model project reports duly endorsed by a multi-disciplinary body to put a stop to the entrepreneur running around. Similarly the schemes of the Central and state governments should be accessible online so that the entrepreneur does not have to go to offices personally.

The policy formulation in the Central Government for Micro, Small and Medium Enterprises suffer from fragmentation and silo-thinking. Each subject matter ministry concerned with a section of MSMEs looks after the interest of their MSMEs to the exclusion of others. Often the Ministry of MSME is not even consulted. Additionally, there are separate ministries for deciding on vital issues like finance, entrepreneurship, skilling, labour issues et all. Therefore, considering the growing importance of the sector, an overarching structure needs to be created for broad policy formulation at the Centre with adequate institutional arrangements for coordination with state governments.

The governance issues like Centre-State relationship, capacity building of institutions, removing information asymmetry, and appropriate delivery mechanisms assume importance in dealing with the entrepreneurs. In this context, the nature of services rendered and the method of delivering them also requires a relook. Instead of traditional services like common facilities, testing of samples, entrepreneurship development training etc, which may have done a lot of good in the past; there is a need to reorient them in the new medium for changing times. Digitally delivered services supported by technology are the requirements of the day. In this regard, most of the services to the entrepreneurs, which are currently being delivered by the government agencies, should be handed over to the private sector and the accredited associations and federations. The Public-Private-Participation mode should be increasingly utilized.

There is a near universal perception among the protagonists of the micro and small sector that greater attention has always been paid by the government to the community of large business and industry. Though this perception cannot be put to a rigorous test, there is no denying the fact that large businesses, owing to their richness of resources, have a much better negotiating power and clout in the government, both at the centre and in the states. They have better organized chambers of trade and industry as well as individual industry associations. They employ highly qualified and paid executives to produce well argued research papers. On the contrary, the MSME associations are not able to buttress their demands with reasoned arguments, without any empirical research.

The small man has a small voice. Besides, the voice of the MSME suffers from fragmentation. There in a plethora of federations and organizations (even confederations!) with limited membership. They become active only when called for discussions. Very few of them are professionally organized and managed. Perhaps there is a need of better coordination among them. The federations and associations need to be involved in actual support activities and business development services including infrastructure development for MSMEs. With this end in view, it is necessary to have a greater involvement of the associations with the entrepreneurs. While in

the MSME sector there are a large number of associations and federations which keep advocating on behalf of the entrepreneurs, given a responsibility and resource support from the government, they can become credible instruments in finding timely solution to the problems of individual enterprises and their clusters.

It is time that to utilize the capabilities and resources of the private sector in providing the much needed business development services to the micro and small entrepreneurs. A market based ecosystem is a framework that allows the private sector actors to act together and create wealth. These actors are dependent on each other. The system adapts and evolves and can be flexible.

It is recognized that the micro sub sector accounts for more than 90% of the total number of enterprises in the country as also more than 90% of non-agriculture employment. While the micro units are eligible for all the schemes for small units, they do not normally figure in the scheme of things because of historical significance of small scale industries. There are, of course, the traditional industries like Khadi, Coir and other traditional industries which consist mainly of micro units. The schemes for these groups of enterprises surely impact the micro sub sector, but do not do full justice to the entire micro subsector. The focus of policy making in the Ministry of MSME has not been the micro enterprise sector, which can be an effective instrument of poverty alleviation and check on rural-urban migration. A credible beginning has already been made in this direction through Prime Minister's Mudra Yojana, which needs to be further supplemented through MSME policy.

It is, therefore, necessary to strike a balance between the interests of the upward mobile small and medium manufacturing sub sectors and the vast aggregation of livelihood oriented micro enterprises. In view of this, a definite inclination towards providing instruments of infrastructure, credit and business development support is indicated. Also, a directional push towards rural areas requires to be considered.

The lack of and asymmetry of requisite information regarding the constituents of MSME universes are visible inadequacies of the available data. To what extent are the macro policies determined by

the Central Government and the State Governments on the basis of vaguely collected total number of MSME units, their classification is highly debatable. We do not think that a logical direction can be indicated on the available information. Till recently, there was no reliable database on the sector and the bits and pieces of information did little to decide on policies and programmes. Now, thanks to the efforts of Secretary MSME, a new database has been put in place with imaginative features. This effort should be expanded to include other features like universal registration, shared information from financial institutions, banks, state governments' programmes, available support institutions etc.

It is absolutely essential to have a transparent database that can be gainfully used by the key stakeholders at the national, state and local levels. Such a database should be maintained and managed by an autonomous agency; should be made available to key stakeholders e.g. central government institutions, state institutions, accredited associations, local bodies, entrepreneurs etc on a 'need to know' basis; should be dynamic; with relevant information to be shared by all including banks and financial institutions , based on the principle of universal registration; all the schemes of central and state governments to be properly displayed. There should also be a mobile app for the entrepreneurs to access the database. Perhaps the name 'Udyog Aadhar' should be replaced by 'Udyam Aadhar'. The registration data of enterprises should be reviewed after every five years. A task Force should be constituted to give a comprehensive template for the interactive database within a short time.

Another area requiring consideration is that of service enterprises. Till 2006, these enterprises were not captured in the policies of the Ministry of Industry. They were merely part of the general business world. But the Act of 2006 has classified them as micro, small and medium and has placed the responsibility for their development on the Ministry of MSME.

May be no committee appointed by the Government of India has specifically gone into the needs and aspirations of the service sector in general and no tangible policy has been put forth. Their basic needs pertain to credit, infrastructure, skilling, incubation, mentoring,

innovation, angel and venture funding. In the anticipated huge role of tourism, travel, hospitality, health care etc, a separate task force should be constituted by the government to propose a policy package for them.

One problem that has always come up in every interaction with the entrepreneurs and their associations related to Delayed Payments. A large number of small and micro industrial units, who supply their products to larger companies, keep waiting for the payments for months. The Act of 2006 provides for such delayed payments to be settled by Facilitation Councils constituted under the Act. In case facilitation fails, the case is referred to Arbitration. But during the whole process, the vendor unit's working capital is depleted and is often declared by the bank as NPA.

As is widely understood, the MSME enterprises are primarily the responsibility of the state government. Each state government devises an industrial policy from time to time on the basis of state's natural endowments, human capital and level of entrepreneurship of the people in the best interest of the state. It is desirable to have the replication of some best practices from the more advanced states as an advisory to other states. It will also be relevant to mention that despite the commonality of MSME problems, the state governments do not consult one another while formulating MSME policies in their domains. Also, there is no consultation between the Union Government and state governments in policy formulation for MSMEs. This needs to be corrected. Perhaps the involvement of Niti Aayog would help.

And lastly, the story of MSMEs in not complete without a mention of the credit needs of the Sector. Lack of adequate and timely finance has been an intractable predicament of millions of enterprises. Many experts and Committees have gone into the problem but only partial solutions have emerged. I am also trying to address the problem with the hope that RBI, SIDBI and other financial institutions take a more compassionate view in larger national interest. If the financing problem is solved to the satisfaction of the MSME entrepreneurs, more than half of their battle would be won.

An empirical study made in 2011 looks at the non-corporate sector

according to caste based entrepreneurship. It says that the non-corporate sector is dominated by the backward sections of the society, i.e, OBCs, SCs and STs. The NSSO survey shows that 5% of the sector is owned by STs and 48% by OBCs. The survey shows that the disadvantaged castes are increasingly participating in the growth of both manufacturing and trade. In rural areas, 72% of the self owned enterprises belong to disadvantaged castes. It can therefore be concluded that policy instruments aimed at developing the MSME sector will directly help the underprivileged section of rural society and help in achieving greater socio economic development.

This gives significance to the fact that India should rethink on its policies of inclusive development to involve the fast increasing number of young entrepreneurs in meaningful economic activities. To my mind, it can be best accomplished by nurturing the micro and small entrepreneurs to grow. Perhaps it is high time the Prime Minister takes a personal interest in the MSME sector and initiates an all-out nationwide programme for its resurgence. only then the different stakeholders will adopt the programme in a spirit of nation building.

P.S.Bawa

Ethics in Education

From The Ordinary to The Sublime – A Simpleton's view

There is unanimity over the issue of teaching ethics to young students, right from early stages so that the same get embedded in their psyche and converted into action. Various reports, both by the government and the UNESCO, have highlighted the need for inculcating right values among young students. There is an emphasis on development of the body, mind, and spirit, as well as stress upon character building. Truth, peace, love, brotherhood, humanism, harmony, empathy, etc., are some of the positive values. Similarly, the negation of negative values is also mentioned, like dealing with injustice, exploitation, disharmony, violence, hatred, and jealousy. These are equally important values to be achieved. There is no dearth of the desirables to be attempted. But the question that arises is how to actualize all these and create an education system that is capable of achieving the laudable objectives.

The quest, therefore, is to find themes that can create lasting impressions upon the mind. It may not be useful to repeat the obvious ones that are categorized as 'should' values. That the student should do that which is mentioned above is not disputed. The challenge is 'how to' do it. So, we have to shift focus from the 'should' to 'how', without losing sight of the 'should'. Perhaps it is left to the genius of teachers and curriculum makers to devise such measures. Ultimately, this has to be done by the experts who alone are responsible and capable.

While it is presumptuous to teach morals and ethics as such, is there any possibility of inculcating some values without making it known that this is being done deliberately? If these are consciously taught, these would be taken as subjects like any other and students would start preparing for examinations and tests as they do for other

subjects. Is it possible to use daily activities and teach ethics during the course of such activities?

Therefore, the challenge is to teach ethics and good behavior while appearing to be not doing so, that it is not treated as a burden and another subject to be prepared for exams. Ethical behavior or conduct is not something anyone would be interested in for the mere reason that it does not add to the knowledge component. There is nothing useful and 'practical' in the teaching of ethics. The reason why none of the committees have indicated the content of ethics is the difficulty of doing so. Therefore, only a mention is made and the rest assumed to happen all by itself. It is in this context that it is desirable to seek some activities that can be undertaken so that ethical behavior becomes a part of a person's personality.

Imperatives

1. There are four imperatives
2. There is a need for 'teaching' ethics;
3. Aristotle said, 'Ethics can be taught';
4. Nobody likes pontification;
5. Therefore, there is a need to search for methods that imbue the person with the desired value system, while doing normal things, thus learning-by-doing/living.

The object of this paper is to search for activities that are normal but, if taken seriously and without being formal, can teach the required values. Without any pretense for scholarship or an expertise in pedagogy, I endeavor to develop certain ordinary thoughts that may help in what we need to achieve. These are only tentative proposals. There is ample scope for improvement in reasoning and an addition to such options.

Simple items with deep consequences

Queue

There is often a jumble of queues at public places and many people demand prior attention over others. Often, this creates a chaotic

situation, especially at bus stops and counters. The malaise is more so when a number of bus routes have common stoppages. What happens is the breakage of a queue, if there is one, and a rush to the arrived bus. It is here that one can witness, firsthand, Darwin's theory of 'survival of the fittest', thus leaving the old, the children, and women to fend for themselves. Another reason for not taking a turn has been the feudal flair of taking precedence over others as a matter of social status. This indicates that the right to equality has not been internalized as it never formed a habit. Not falling in queue is a sign of aggrandizement and aggression. It is iniquitous too.

It is thus proposed that the value of queue formation must be instilled in the student. For instance, during recess, the children rush to the water tap or a cooler. In the melee, water is wasted, and it takes more time for them to quench their thirst, while at the same time soiling their clothes. This is also so when the school closes for the day and children rush to get into the bus. The view outside schools is chaotic during recess or at the time of closing. Both activities can be regulated by senior students under the supervision of teachers. This would have a dual advantage of setting things right and teaching senior students a sense of responsibility, besides the young getting the feel of advantage.

Once queues are given priority and importance in the scheme of things, one can discern many other advantages of this practice. Firstly, children shall learn to take a turn and not push their weight around to get precedence over the physically weak. Secondly, they shall learn the aspect of justice that prevents taking undue advantage, in other words, the play of equality, a value which is of utmost importance. Thirdly, they shall learn to cooperate with each other by avoiding the pushing game. Fourth, they shall practise the art of patience and take their turn. Fifthly, they shall learn to acknowledge the 'other' and have consideration for their fellow human beings. 'Caring for the other' is a virtue in itself, translating to the principle of 'others before self and not the self before others'. In this way, they shall realize that it is better to avoid confusion rather than make a mess of it. The teacher can tell them, during the queue, that there are many positive aspects of this practice. The exercise shall deliver if it is

intended and informed so that the children learn its advantages and practise it wherever they are. This shall become a habit and second nature. This would also prevent the display of braggadocio by the aggressive ones.

Queue formation is an aspect of civilized behavior. It asserts the rule of liberty, equality, and fraternity. Everyone is equal. The rule of FIFO (first-in, first-out) applies. One must have the patience of waiting to get to the destination. Free loaders and aggressors can frustrate the system. This is not permitted by those who crave for justice. Thus, queue teaches the young to be patient, they learn to await their turn, they respect the rights of others, and they feel a sense of fairness. Thus, many social and cultural values can be inducted in the psyche of the young person. Queue is thus to be taken seriously and not as an aspect of a ritual. It pronounces decency and equality, and even fraternity when people stand behind each other without any feeling of discrimination. If you avoid a person standing next to you or want to have a choice of not being behind him, then you pay the price of going back and losing your site by admitting others in the line.

Queue also teaches importance of time. It prepares for taking your turn smoothly. Imagine all trying to get the same thing at the same time. It is not only difficult and impossible, but also messy. Everyone has a better opportunity only by respecting the discipline of the queue rather than breaking it. There can be rage if a queue is not maintained, and conflicts may arise because no one likes inequities. A queue, therefore, is a great leveler.

Seed

Such a small thing as a seed, often taken for granted, can be an instrument of ethical teaching. There are various aspects of it that can be used to impart education. One, it teaches the importance of cause and effect. The seed undergoes a transformation in the natural process. If there is no seed, there can not be any growth. The cause of growth is the seed. The growth is the effect of the planting of seed. The seed is the cause, and flower is the effect. Secondly, you get what you sow. If you sow wheat, you cannot get apples. If you sow

thistles, you cannot get resins, says Baba Farid. This is a great lesson in life- "you reap what you sow". This can inspire one to do good deeds for there is an intimate connection between cause and effect. Third, the seed would grow only if you tend it well and look after its sustenance, like air, sunshine, water, weeding out the undesired, and manure. All this means taking care of your creation as well chiseling the personality.

Four, it requires hard work and attention. This also indicates that there is a system and technique for doing a thing. Five, there is a sense of wonderment when the seed grows into a flower, quite different from what it was. The child would be ecstatic on seeing it grow. Six, this exercise would indicate importance of laws of nature. There are two lessons in this. One is that the unseasonal seed does not grow. The other is that the halved or broken seed does not grow. It has to be one and one only and not split. This reflects the need for integrity. Seven, there is rule of finiteness. Every thing that grows first diminishes and then vanishes into dust. This is so with all things that are seen. Sooner or later, there is finality to a thing. Nothing is lasting in this world. Eight, for obtaining results, one has to wait. The reward may not be instant, but will surely come. This would ensure that the child does not give up if the results are not immediate or favourable. S/he would learn the art of waiting for results with patience. The idea is also positive in the sense that if you sow good seeds, then results would be good. If the deeds are good, so would the outcome be. It is unjust to sow poison and expect nectar.

Another dimension of the seed analogy is that its results cannot be concealed. One may sow a seed of wheat and say it is of apple. This is concealment. But when the seed is planted it assumes its true form and the truth is out. It is the same with one's deeds. One may go on pretending to be good, but the results reveal themselves during one's lifetime. Hence, the concealment is of no avail. It is, therefore, right to be authentic than pretend what is not.

Games

The art of play games too has a lot to offer in the teaching of ethics. This not only helps in looking after the body, it also entertains

children. But there may be instances where facility for outdoor play is not available. In that case, indoor games can be played. The object is that children must play the game, as they say it. This means that the child shall learn to abide by the rules of the game, for all games have rules and code of conduct. We make the child conscious of the importance of rules. Only if rules are obeyed can the game be played. Secondly, there shall be no cheating, else the game gets distorted. This habit of playing by the rules shall make a child accept the rule of law as rules of the game and laws have the same function - to enable a smooth operation of things. Thirdly, the child learns to accept defeat gracefully that may trigger off a desire to improve and achieve excellence. One also learns the art of losing gracefully and acknowledging others' talents. In this lies the civility of behavior. Fourth, the child learns to be non-violent and not shameful at the loss. This takes off the sheen of arrogance off the child and s/he behaves without a sense of defeat. Five, the collective games teach one the need and benefits of cooperating with others and acting as a team in order to win. Children learn to act collectively as a team and work as a group, each realizing the role one is best fitted to perform.

Caring for the body: cleanliness

It is the body that contains within itself the mind, intellect, understanding, wisdom, etc., for without the body nothing exists. One has to exist before one can sublimate. It is the abode of dharma (*dharamsal*). It is in this context that its proper use is recommended so as not to fritter away the opportunity for fulfillment. One may recall the lesson of learning cleanliness in the school when the teacher insisted upon a neat copy and homework, nails cut, clean clothes, and hair well maintained. Interest in cleanliness too is an issue of ethics if one takes it consciously. Sound body has a sound mind. It would propel sound and clean thoughts, and take the child out of dualities of behavior. It is a virtue well adopted.

Sharing

There are three lessons to learn from the habit of sharing. One, it increases compassion among the child. Two, s/he would start believing in equality. Three, it inculcates the strength to give and part

with. Sharing a meal, homework, not in the spirit of plagiarism, but to help one's peers to complete work while making the other understand it, or bringing the unusable items from home and offering these for use by others so that these are not wasted and are useful to someone. The idea is to prepare the child to part with things, when not required or just to share with those who are deprived of these. Children are often acquisitive and do not want to give to others. On the other hand, they try to get more of the same from the other child. When this tendency continues while growing up, this cultivates, unwittingly, the habit of unnecessary accumulation of items that can be better used by others. One of the exercises can be to ask children to get an item each from home, then shuffle these and tell children to use the collective. Or all these items go as a donation. The child is likely to learn the art of giving.

System

Everything works according to a system. It is known as *maryada* in our system of thinking. Everything is under control. Nothing is independent, everything is dependent upon the other/s, and therefore there is the imperative of interdependence. This is the cosmic law and accepted by all ethical systems and religions. One, therefore, has to acknowledge and find a space within the system, as one cannot have a totally reclusive life, independent of all. For many things, we depend upon others. The student depends upon teacher for education, trader depends upon customers for his sustenance, producer depends upon consumers for his products, and production depends upon availability of raw material that is created by someone else. Farmers produce food and fruits for all.

Most of the diseases are the result of unsystematic living, living beyond domain of principles that cause an imbalance in the body. Every part of the body responds to a rule. Pain in one part disturbs the whole body. The body is a perfect balance. One of the attributes of a system is that one deficiency leads to consequences in other spheres. Hence it is necessary that the person is taught to respect the laws of nature and disciplines without which life would be meaningless and burdensome. Other systems to which the child

should be introduced are banking, railways, communications, water, electricity, and traffic.

Common good/s

The concept of common goods is of practical value in three senses. One pertains to 'common ideals', second to 'common good', and the third to 'common goods'. The first refers to common 'ideals' like the supremacy of law, rights, equality, freedoms, sanctity of life, justice, peace, security, and order. This also includes diversity and tolerance thereof for enrichment of culture, like 'let hundred flowers bloom' as all cultures have deep roots and meanings in their own world views.

Secondly, the common 'good' is something that is in the interest of all. Kant's advice on the subject is the basis of ethics. This is captured in the categorical imperative. 'Act only according to the maxim by which at the same time will it become a general law'. This is also expressed in these words - 'Act as if the maxim of your actions were to become through your will a general natural law'. (Kant; The Metaphysics of Morals; 1965; p.26) This maxim is in the interest of the general good. In other words, actions of all must be in such a way as are acceptable to all without any exception. The common good is breached if people start acting as they like. There would be no discipline on the road, pavements, and public spaces if people were to act as they pleased. Hence, the general good is dependent upon every one's 'behaving' in acceptable manners.

In the context of students, the 'common goods' are the toilets that are often uncared for, the classrooms that are massy with walls full of graffiti, the playgrounds full of litter, the corridors not worthy of a view, etc. These are all common goods that none owns but all use, like the roads, parks, streets, etc. These are shared spaces. Like gardens, monuments, lakes, bridges, roads, railways, buses, stations, etc. The students must be made to realize that these are their concern for their own benefit. What one does not like for oneself is also not liked by the other. So, one should not do anything that affects the satisfaction and sense of justice of the other. "If I am careful in using the park, the bridge, the road, the toilet, or any other public space,

then I shall expect all others to do the same and they as 'I' shall have the same expectation from me."

Holidays and important days

There are two types of holidays. One falls in the category of national days, like Republic Day, the Independence Day, and the Gandhi Jayanti. The others pertain to religious days of celebration or memory of iconic persons. Both are an instrument of imparting education in ethics. Since most of the holidays have roots in either good people or events, these occasions can be used to convey an appropriate message.

The significance of the holiday must be understood. Most of the religious holidays are beyond the comprehension of students, even the adults. They just celebrate the free time without knowing the significance of the day and logic of the same. All religions have a public face. The rituals, the processions, celebrations, and gatherings are in the public domain. Yet there is almost a complete ignorance. Most of the people, unless they belong to the community, do not know the significance of the day. In a secular society, it is imperative that we know all the denominations. We shall accommodate each other only if we know them. There is need to find points of convergence and search for common denominators and a moral code. Familiarity shall breed love, compassion, understanding, and mutual respect.

Similarly, other secular personalities have a lot to do with history, national movement, and contemporary events. The significance of Independence Day and Republic Day has to be instilled in the student on the eve of the particular day. This opportunity is often missed in the euphoria of a holiday. In fact, students ought to be made conscious of their heritage.

Even the internationally celebrated events like the Human Rights Day, Anti-Corruption Day, Environment Day, Women's Day, , etc., are all loaded with meaning and significance. This is also desirable in the context of the secular society in which we live. Understanding shall raise the level of tolerance. It is a process of learning because all personalities and events have a meaning. Let holidays not be

occasions for spending good time only. There ought to be seriousness so far as the importance of the day is concerned. Repeated every year, the ethics would get embedded in the students. In this way, the students shall learn of the lives of great personalities as well as their achievements, besides developing a love for heritage. This would strengthen the bonds between citizens and remove hurdles in understanding the 'other' and not belittling the tradition for want of knowledge. However, these items can also be woven in the teaching of subjects.

The object is to intensify civil religion by inculcating civil virtues for a better social order. This has nothing to do with religion as such, but whatever is of value anywhere is to be picked up. These are humanitarian virtues that benefit all.

In the same manner, the words like a person's name (especially Indian names) having ethical and positive connotations can inspire one to prove true to the name. There is significance in a name which is loaded with a meaning that ought to be discerned. 'Lamp' as a metaphor can refer to dispel darkness and igniting other lamps thus making the dormant oil and wick produce light and work as a multiplier. Similarly, water is a metaphor of life, humility, purity (as it cleans), and equality (as it spreads evenly). Singing in a 'chorus' or playing in an 'orchestra' is educative as one knows one's role, not to transgress it, take the turn appropriately, assignment of role, working in harmony and a rhythm, cooperation and respecting the space of the other.

Aspects of Invisible Pedagogy

It is a fact that teachers are engaged in imparting information and knowledge to students ('banking syndrome', according to Paul Friere). They are concerned with the cognitive aspect of education. However, there is no emphasis on cultivation of manners, etiquette, and other finer aspects of behavior. It is acknowledged that the character of the student is formed by the encounter with the teacher whose mannerism and behavior affect the child. The image of the teacher has a profound impact upon the student. Thus, the role of the teacher is critical in imparting a value system for which the following

techniques may be applied. Here are some of the methods by which ethics can be imparted without any special labor or consciousness.

Voluntary service

Service purifies the mind. It also creates humility and regard for the other. This is work without reward; the reward being having performed the service. In the school, this can be done for cleaning the playground, the classroom, keeping the black board clean, keeping clean the corridors and the bathrooms.

Using proverbs

One of the methods is to teach proverbs that have a hidden message, significant as well as catchy. Both in English and the colloquial, these are full of wisdom. Somehow, these have been discarded in favor of slang. But if one looks to their meaning and expression, these are full of wisdom culled out of experience. However, some idioms have their contraries too. Yet those with constant meanings are far too many.

Using parables and story telling

Parables are stories that convey a message, and a lesson that inspires. For instance, the story of a man dejected with his life meets a saint. Since he is dejected, the saint asks him the reason. He expresses his dejection as he was very poor and had no possessions. The saint offers to buy his limbs, one by one, and the person keeps refusing. The saint tells him that while he said he was poor, he did not accept even the highest price offered for his eye, hand, leg, ear, nose, etc. The story's message is that life is precious. Only one has to realize its value and importance. One must make the best use of what one has. There are many such parables. One needs to collect these for use at appropriate moments during teaching. The story by Leo Tolstoy, titled 'How much land does a man need', is highly instructive.

There are many parables about the life of the Buddha that are instructive, like the one in which Angulimala is instructed to pluck a leaf and then join it with the tree by the Buddha. Since he cannot do it, the lesson is that if you cannot give life, do not take it away,

as Angulimala was wont to. There are many that advise one to shun arrogance, accept humility as a trait, charity, education/enlightenment, etc. It would be better to bring about congruence between personal and secular religion.

Universal truths

There are certain eternal truths that are unchangeable, unless interfered with. Truth is what is forever and unalterable. The following truths are eternal and universal.

- Life is finite
- Laws of nature suggest that all that is visible is destructible.
- Cause and effect. For every consequence there is a cause, a motivating force.
- The good wins ultimately. There is victory of the good over the bad. One can draw lessons from the scriptures and mythology.
- Conscience is an all-seeing entity. It speaks to everyone. The person has to listen to the inner voice that is constant. It is inaudible only if it is attended to or ignored.
- There is a mind-body continuum. One without the other is of no avail. Both have to function in tandem.

Using religion

The Supreme Court in its judgment *Aruna Roy vs. Government of India* (2002 (7) SCC 389) has laid at rest all doubts and apprehensions of secularists that teaching religion would be detrimental to the cause. It held that religion was a major source of value generation. The academic study of the teaching and the philosophy of any great saint such as Kabir, Guru Nanak and Mahavir could not be prohibited by Article 28(1) of the Constitution. The Indian concept of the dharma presents different ways of knowing the truth. There is a difference between teaching dharma and philosophical study of religion and preaching dogma. Article 51A states: 'It shall be the duty of every citizen of India … to value and preserve the rich heritage of our composite culture'.

There is thus no bar in using religion for educational purposes. All religions have a message. Therefore, it is not undesirable to use the teaching of holy personages for teaching values to students. This would also develop mutual respect for religion of the 'other' which is essential in a liberal secular democracy. The students would learn to respect the ideas of others and not be dogmatic.

Using the Constitution

The Constitution of India is itself an ethical document. The preamble, the fundamental rights, the directive principles of state policy, and fundamental duties deal with themes of justice, equality, freedoms, dignity of the individual, and respect for all religions and faiths. It also enjoins a duty upon every citizen to perform certain duties that have an ethical base, like developing a scientific temper, eschewing practices derogatory to dignity of women, care for environment, law-abidingness, etc. The teacher has to inform students to be careful and conscious in performing duties. Thus, whenever any aspect of the Constitution is taught, the aspect of ethical moorings of the concepts must not be ignored. In a way, the Constitution is secular, spiritual, reverential, and an inspirational document that guides governance as well as individual ethics. Constitution and religion are thus two important pillars of ethical teaching.

Ethics to be integrated in subjects

This is the easiest way of achieving the desirable by injecting ethics in all courses of political science, economics, literature, sociology, history, and other humanities. For example, while discussing the forms of government in political science, the issue of corruption and misuse of power that are at the root of all problems, may be highlighted. While studying history, the ethical aspect of personalities and their policies can find a suitable reference. It is not enough to be biographical and chronological while studying a monarch or a leader, but it is equally relevant to discuss his/her ethical orientation. Literature too can be suitably utilized for this purpose.

The advantage with this approach is that ethics are not made the focal point of discussion but are integral to the whole. The student

shall not feel disgusted in being loaded with precepts of morals and ethics. The same approach can be used in sciences when the logic of inventions is discussed. The issues of euthanasia, reproduction, surrogacy, birth control, etc. have an ethical dimension. The use of computers and IT that makes it possible to spread obscenities and good ideas has an ethical aspect. All instruments that increase the power of the individual like firearms, bombs, plastic devices, etc., though vey useful in making the state more effective, fall within this category and have to be considered. Hence, there is no reason why these aspects of ethics should not be brought into the open with students.

Example setting

Role of dress, demeanor, and dedication of the teacher has a lasting effect upon the child. It is imperative that the teacher is conscious of this truth and designs presentation of his/her personality in such a way as to impress the right things upon the students. A teacher who does not accept something that s/he does not know or one who avoids answering to the satisfaction would be treated as a laggard and uninspiring. Such a teacher is capable of setting a wrong example that is lasting in its impact. Praxis is an important part of pedagogy. The teacher must be available for interaction and clarification of any doubt. The student must have the confidence of queries being attended to. The way pedagogy is conducted has a deep impact upon behavior of students who practise the same when they grow up. The teacher is equipped to create habits of mind by emphasizing the core values during lessons. All this has to be invisible and must have nothing to do with conscious effort. To the extent possible, the bridge between theory and practice may be established.

Visit to Institutions

There are many inspirational institutions that can teach a lot of values. Therefore, visits to such institutions must be part of education. There are two types of such institutions. One, there are those that tell about the truths of life. For instance, a hospital tells us about birth, disease, and death. It also teaches virtues of compassion and service. A refugee camp may also be considered in this category.

The other type belongs to the category that widens the horizon of thought. These are religious places, museums, art galleries, memorials, monuments, a zoo and so on. These teach the virtues of care, new visions, ways of looking at things, and give dimension to adventure in thinking. The objective is to foster right emotions among the wards. Similarly, a visit to a sporting event can be rewarding as it teaches the strength of coordination, concentration, harmony, and concerted action.

Caveats

Different strokes for different folks

The above items must be used appropriately for different age groups. It is for the teacher to decide where each item fits in which age group. Most of these are activities, but some of these are thought processes. Thus, discretion to say the right thing to the correct age is the responsibility of the teacher.

Nobody likes pontification.

Ethics itself is a dense subject, especially in the hands of philosophers who have done a lot of hair splitting. The task is to make it simple, understandable, and shift it from the realm of 'should' to 'doing', from 'ought' to 'action'. This can be drilled at the earlier stages among children and gradually given the logic of what is being practised. Therefore, the teacher has to be conscious of this aspect so that during the lesson, the ethical aspect is silently and unknowingly slipped into the process through a context. If the teacher has this aspect working on the mind, achievement of the objective is likely. Let teaching and learning not be a burden upon anyone. Let this be integrated in action, thought, and practice. All activities must have a content of creating a good citizen who is caring, considerate, and conscious of the other.

Anand P. Gupta

The Mess in India's Power Sector:

Has UDAY Made Any Difference?

INTRODUCTION

An October 5, 2012 Office Memorandum of the Government of India (Government of India 2012) estimated the accumulated losses of the State power distribution companies at about Rs. 1.9 lakh crore (2.1% of GDP). There is reason to believe that this figure captures the situation at the end of March 2012. According to R Gopalakrishnan, as of March 2015, the accumulated losses of these companies added up to Rs. 3.8 lakh crore, and their outstanding debt to Rs. 4.3 lakh crore (Gopalakrishnan 2016).

According to the above Memorandum, "...after a decade of the one-time settlement of outstanding dues, the distribution utilities find themselves again in a situation which has the potential of affecting not only the power sector but the financial sector as well. The deteriorating health of Discoms is affecting their ability to procure incremental power, commissioning of new generation capacity and the debt servicing of power producers. This may derail the capacity addition programme and could lead to a situation of stranded capacity on the one hand and dissatisfied consumers on the other." (Government of India 2012, pp. 5-6.)

Has the Government of India's Accelerated Power Development and Reforms Programme (APDRP)/Restructured APDRP, on which tens of thousands of crores of rupees have been spent, made any visible difference? Things haven't worked the way the Government of India assumed they would. APDRP/Restructured APDRP has failed in changing the behaviour of its key stakeholders along the expected lines, as a result of which it has failed in delivering

the intended outcome of substantial reduction in the State power distribution companies' aggregate technical and commercial (AT&C) losses. Indeed, the Programme has turned out to be a huge financial burden on the utilities.[1]

How has the present Government of India (GOi hereafter)/ Union Government responded to this mess in India's power sector? What are the interventions that it has launched and are these interventions delivering the intended outcomes? These are extremely important public policy issues and this article attempts to address them. The plan of the article is as follows. Section 2 describes the scheme called UDAY (Ujwal Discom Assurance Yojana) that the GoI has launched to improve the operational and financial efficiency of the State Power Distribution Companies. Section 3 articulates the theory of change underlying UDAY. Section 4 attempts to assess the difference UDAY has made. Finally, Section 5 presents some concluding remarks.

UDAY

On November 20, 2015, the Government of India issued an Office Memorandum, announcing that it has approved a scheme called UDAY to improve the operational and financial efficiency of the State power distribution companies, with the outcomes to be measured through (a) reduction of AT&C loss to 15% in 2018-19 and (b) reduction in gap between average cost of supply (ACS) and average revenue realized (ARR) to zero by 2018-19. The Government has designed several interventions to achieve these outcomes. These include:

(a) compulsory feeder and distribution transformer (DT) metering by States, so as to be able to track losses at the feeder and DT level for corrective action; consumer indexing and GIS mapping of losses, so as to be able to identify loss-making areas for corrective action; and upgrading or changing transformers, meters, etc. so as to be able to reduce technical losses and minimize losses;

(b) comprehensive IEC campaign to check power theft;

(c) increased supply of domestic coal, so as to reduce the power generation companies' dependence on imported coal; coal

linkage rationalization; and coal price rationalization based on gross calorific value. The participating States shall also be supported with additional coal at notified prices and low-cost power from National Thermal Power Corporation and other Central Public Enterprises.

(d) improving efficiency of State generating units, for which National Thermal Power Corporation would handhold;

(e) taking over by the State Governments of 75% of the State power distribution companies' (DISCOM) debt as on September 30, 2015 over two years (50% in 2015-16 and 25% in 2016-17), with the borrowings made by the State Governments to takeover DISCOM debt transferred to the DISCOMS as a mix of grant, loan and equity, with the State Governments guaranteeing repayment of principal and interest payment for the balance DISCOM debt, and with the debt taken over by the State Governments not to be counted against the fiscal deficit limit of the respective State Government in 2015-16 and 2016-17;

(f) taking over by the State Governments of the future losses of DISCOMS in a graded manner (e.g., 5% of the loss of 2016-17 and 10% of the loss of 2017-18), with the banks/financial institutions not advancing short term debt to DISCOMS for financing future losses;

(g) losses of a DISCOM after October 1, 2015 (if any) financed only up to the extent of loss trajectory finalized by the Government of India's Ministry of Power with the concerned State Government, through State Government-issued bonds or bonds issued by the DISCOM backed by the State Government guarantee, so as to keep the borrowing within limits and cost of borrowing low;

(h) participating States may get additional/priority funding through the Government of India's Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), Integrated Power Development Scheme (IPDS), Power Sector Development Fund, or other such schemes of the Ministry of Power and Ministry of New and Renewable Energy. States not meeting operational

milestones will be liable to forfeit their claim on IPDS and DDUGJY grants; and

(i) quarterly tariff revision, particularly to offset fuel price increase.

The Ministry of Power will devise a suitable review mechanism with representation from the Ministry of Finance to ensure a close monitoring of performance on monthly basis to prevent any slippage.

THE THEORY OF CHANGE UNDERLYING UDAY

The Ministry of Power believes that UDAY will incentivize the State distribution companies that avail of the assistance available under this Programme to behave differently and thereby deliver the intended outcomes. But the Ministry has not explicitly articulated the theory of change for UDAY. My source material for this article also did not throw up any explicit theory of change for this Programme. But one can surmise this theory of change on the basis of information obtained from such materials. The theory consists of five assumptions.

First, the Ministry of Power assumed that the project prepared by a DISCOM for compulsory feeder and DT metering, consumer indexing and GIS mapping of losses and upgradation or change of transformers, meters, etc for implementation under UDAY is an objective project, designed to address, in a cost-effective manner, the problems which the DISCOM has diagnosed, so that it (DISCOM) does not end up assuming financial liabilities which may not allow it to reduce the gap between its ACS and its ARR to zero by 2018-19.

Second, the Ministry of Power assumed that the equipment (e.g., meters) that are installed under UDAY will work the way they are supposed to work. In case they are tampered with, the systems that are put in place will alert the concerned DISCOM's employees, so that appropriate action(s) may be taken.

Third, the Ministry of Power assumed that the training imparted to DISCOM's employees under UDAY's comprehensive IEC campaign to check power theft, will equip them with the necessary knowledge,

skills and attitudes to properly use the equipment procured for implementing DISCOM's project under UDAY. Also, it was assumed that as a result of this training, employee behaviour will change in such a manner that they will identify the people stealing electricity under their jurisdiction and report such theft to the concerned authorities so that appropriate action(s) against the guilty party(ies) may be taken.[2]

Fourth, the Ministry of Power assumed that the concerned State Electricity Regulatory Commissions are manned by people who are independent and have the requisite domain expertise,[3] and that UDAY will create an environment which will allow these Commissions to determine power tariffs which (a) cover all necessary costs without any gold-plating and (b) which do not provide for any subsidies, and (c) if considered necessary, subsidies to be fully funded by the concerned State Governments.

Finally, the Ministry of Power assumed that UDAY, by helping the DISCOMS in reducing their AT&C losses and in reducing the gap between their ACS and ARR, will have the effect of substantially improving their financial health, which in turn will (a) enable them to buy additional power to meet their customers' demand, (b) allow them to not resort to load-shedding, and (c) incentivize those customers with capacities for self-generation of power to depend on grid power for their power requirements.

HAS UDAY MADE ANY DIFFERENCE?

UDAY is meant only for State-owned power distribution companies. Why? What are the signals that such discrimination gives to the private sector, especially when the Government is trying to involve the private sector in developing the infrastructure the country needs? Such discrimination creates a distortion which has the potential of spreading public sector's apathy to the private sector.

The UDAY website (www.uday.gov.in) lists States that have opted for UDAY. Although UDAY is optional, 27 States and Union Territories have opted for it: Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhatishgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh,

Maharashtra, Manipur, Meghalaya, Mizoram, Puducherry, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telengana, Tripura, Uttarakhand and Uttar Pradesh.

The website also ranks States on how they have implemented UDAY. The latest available data (as on May 3, 2017) relate to the quarter ending December 31, 2016. Gujarat ranks first, followed by Karnataka, Maharashtra, Telengana, Himachal Pradesh, Uttarakhand and Punjab.

Who did these rankings and what is the methodology used for these rankings? Why should the latest available data (as on May 3, 2017) relate to the quarter ending December 31, 2016? What happened to the Ministry of Power's commitment that it will devise a suitable review mechanism to ensure a close monitoring of performance on monthly basis?

According to the data available on the website, of the total bonds amounting to Rs. 2,68,778.21 crores, bonds amounting to Rs. 2,32,500 crores (86.5%) have been issued. Given that these figures do not include the data for eleven of the 27 States and Union Territories that have opted for UDAY (viz., Arunachal Pradesh, Goa, Gujarat Karnataka, Kerala, Manipur, Mizoram, Puducherry, Sikkim, Tripura and Uttarakhand), and that the figure of Rs. 2,68,778.21 crores cover only 75% of the debt of the DISCOMS in the remaining 16 States and Union Territories, one can guesstimate the DISCOMS' total debt as on September 30, 2015 to be roughly INR 8 lakh crores. This amounts to as much as 5.86% of GDP.

This is just one part of the mess India's power sector is in. The other parts include: underutilization of the power generation capacity;[4] DISCOMS not buying as much power as they should, not because they don't have demand for the power they can supply, but because their weak finances don't allow them to buy adequate power, and therefore they resort to load shedding; and many on the demand side, responding to the DISCOMS' behavior by using power from captive power plants, when power from the grid is not available, at a price which is substantially higher than the grid power price.[5] Sadly, this has been going on for years.

The Ministry of Power is hoping that with reduction of AT&C losses to 15% in 2018-19 and with reduction in the ACS-ARR gap to zero by 2018-19, the outcomes that the Ministry expects UDAY to deliver, the DISCOMS will start buying as much power as they should and stop load shedding, with the consumers meeting all of their power requirements from the grid. Thus, UDAY can play an extremely important role in taking care of the mess India's power sector is in.

UDAY is over 18 months old now. Has it made any difference?[6] Are things happening the way the Ministry of Power assumed they would? Is there any reduction in AT&C losses? Is there any reduction in the ACS-ARR gap? Are the DISCOMS buying more power? Is there any reduction in load shedding by them? Is there any reduction in the demand for captive power? The following section attempts to answer these questions.

Is There Any Reduction in AT&C Losses?

UDAY aims to reduce AT&C losses to 15% in 2018-19. How? Through comprehensive IEC campaign to address the chronic problem of widespread, massive theft of power.[7] The expected date of completion of this campaign was December 31, 2016. What were the contents of this campaign? Who designed them and who conducted the campaign? Did the campaign take into account the huge inter-state and intra-state variations in AT&C losses?

What is the causal link between the IEC campaign and reduction in AT&C loss? The assumption seems to be that the campaign changes the behaviour of those who steal electricity – they stop/reduce stealing and start paying for the electricity they use. Does the available empirical evidence reflect this?

According to the data on the UDAY website, AT&C losses averaged 23.98% for 16 States as on September 30, 2016. But these losses averaged 19.95% for 22 States as on December 31, 2016. Which means that there was a reduction of as much as 4.03 percentage points in these losses in just three months. And this suggests that the Ministry of Power may have already achieved its 2018-19 target of reducing AT&C losses to 15%! What is it that has caused such a remarkable reduction in AT&C losses? Is it the IEC campaign?

There is no evidence suggesting such a causal link.

The Government of Uttar Pradesh (UP) is reported to have decided that anyone caught stealing power after June 15, 2017 "will face a jail term of up to five years. If caught for the second time, one will go to jail for 10 years. UP has been struggling with the bane of power thefts for decades now, with successive governments failing to do anything about 'kundi' connections and other blatant pilferage, sometimes of entire transformers and electricity poles. Having come to the conclusion that it has had enough of it, the state government has decided to take stringent steps to curb pilferage. According to an internal assessment report on AT&C losses till December 2016, prepared by the UP Power Corporation Limited (UPPCL), of the total power supplied almost 31% of power was pilfered last year." (The Times of India 2017.)

This reveals huge inter-state variations in AT&C losses: whereas the AT&C losses averaged 19.95% for 22 States as on December 31, 2016, they were more than 50% higher in Uttar Pradesh on that day! This also suggests that the Government of Uttar Pradesh is not happy with the reduction in AT&C losses under UDAY and has therefore announced the above decision.

Is There Any Reduction in the ACS-ARR Gap?

UDAY aims to reduce the ACS-ARR gap to zero by 2018-19. Why zero? Why not aim to generate a reasonable surplus? UDAY aims to reduce the ACS-ARR gap through interventions designed to reduce the cost of supply (including interest cost) and through interventions designed to increase revenue (including reduction in AT&C losses). Interest cost alone accounted for 44 paise of the ACS-ARR gap as on September 30, 2015.

According to the data on the UDAY website, ACS-ARR gap averaged 67 paise per unit for 16 States as on September 30, 2016. But the gap averaged 48 paise per unit for 22 States as on December 31, 2016. This means that there was a reduction of as many as 19 paise per unit in this gap in just three months.

How much of this reduction in the ACS-ARR gap can be attributed to taking over by the State Governments of 75% of the DISCOMS'

debt as on September 30, 2015, and how much to other interventions? Precise details are not readily available, but it is clear that taking over by the State Governments of 75% of the DISCOMS' debt has played a major role in this reduction.

Are DISCOMS Buying More Power?

The UDAY website has no answer to this question, but this is what Tata Power Managing Director Anil Sardana said in a recent press interview: "UDAY has helped DISCOMS and improved payments, but the biggest challenge for the sector continues to be the offtake of power. DISCOMS are still reluctant to buy power." (The Economic Times 2017). Why is this so?

Is There Any Reduction in Load Shedding By DISCOMS?

According to the Memorandum of Understanding that the DISCOMS have signed under UDAY, "The DISCOMS shall increase hours of power supply in areas showing reduction in AT&C losses." (Ministry of Power 2016, p. 8.) Given that UDAY has succeeded in reducing AT&C losses, one expects a reduction in load shedding by DISCOMS. But the UDAY website doesn't say anything on this issue.

Is There Any Reduction in the Demand for Captive Power?

The causal relationship between reduction in AT&C losses and reduction in demand for captive power is not straightforward. DISCOMS generally subsidize at least some of the power used for domestic purposes.[8] This being so, and given that captive power is very expensive, any reduction in AT&C losses is expected to cause a reduction in load shedding by DISCOMS, which, in turn, is expected to cause a reduction in demand for captive power in the domestic sector.

On the other hand, given that the power prices applicable to the commercial and industrial sectors in almost all States include a tax element, a reduction in AT&C losses may not necessarily cause a reduction in the demand for captive power in the commercial and industrial sectors. Much will depend on how much the captive power

costs and how much the grid power costs. If the grid power costs more than the captive power, a reduction in AT&C losses will not cause a reduction in the demand for captive power. But if the grid power costs less than the captive power, a reduction in AT&C losses can be expected to cause a reduction in the demand for captive power. The UDAY website doesn't provide any data on how the reduction in AT&C losses has impacted on the demand for captive power.

Concluding Remarks

Has UDAY made any difference? Will UDAY succeed in delivering the intended outcome of making India's DISCOMS financially viable, so that they are no longer a burden on the country's public finances[9] and so that they don't have to be bailed out again and again? There are certainly some positive signs, but one cannot, because of lack of corroborative evidence, definitely say that UDAY has made a positive difference. One will have to wait for some time before one can say something definite about UDAY's impact. But there are three things that the Ministry of Power must do in the meanwhile. First, it must put in place a mechanism to have the data available on the UDAY website audited by an independent institution.

Second, the Ministry must create an environment which will allow the State Electricity Regulatory Commissions to determine power tariffs which (a) do not include any tax element and (b) do not provide for any subsidies, with subsidies, if considered necessary, to be directly transferred by the concerned State Governments to the intended beneficiaries.

Finally, given that India's power sector is dominated by public entities, the Ministry needs to mull over the wisdom underlying this domination. As part of the Government's agenda of transforming India and raising the much-needed resources for implementing this agenda, I believe there is a very strong case for launching an initiative for privatization of DISCOMS. One can take the example of Delhi in this context. Things under BSES Rajdhani Power, BSES Yamuna Power and Tata Power are substantially better than those under Delhi Vidyut Board.

Of course, there are some political and economic issues associated

with privatization of public enterprises. It's not just politicians and policymakers who oppose privatization of public enterprises.[10] Other people, including employees in the concerned administrative ministries/departments, also do so. However, this is something that can be managed.

Notes

i) I have developed the theory of change for Restructured APDRP and am willing to disseminate the same subsequently.

ii) The sad truth is that the aggregate technical and commercial losses, including massive losses attributable to theft of power, have been high because of political patronage and power distribution company employees' connivance. This is what The Times of India reported on June 24, 2014: "While large parts of Uttar Pradesh suffer unbridled power cuts, Samajwadi Party chief Mulayam Singh Yadav's constituency Etawah doesn't merely get 24x7 electricity; at least 72% of its people get free power through pilferage. While chief minister Akhilesh Yadav has been issuing directions to power officials to curtail line loss, in his own hometown, Etawah, sources in Dakshinanchal Distribution Company said only one out of four consumers of electricity is paying for it. Not that the rest of the state is too far behind; other districts report 35% to 50% power theft." (The Times of India 2014.)

iii) Power as a product has some unique characteristics. One needs to understand these characteristics, so that one can appreciate the risks that a power supplier faces and then figure out their implications for power pricing. One also needs to have a good understanding of the theory and practice of power pricing and of innovations in power pricing such as real-time pricing of power.

iv) According to Anil Sardana, Managing Director, Tata Power, "…existing power plants are suffering from low utilisation rates of about 60%, or are lying stranded for either want of fuel or power purchase agreement" (Sardana 2017).

v) A resident in Greenwoods City, Sector 46, Gurugram,

Haryana pays as much as Rs. 17 per unit for captive power, against Rs. 4.50-6.75 per unit for grid power.

vi) According to Rajiv Kumar, UDAY has made a positive difference, in the sense that "State utilities have been freed from their debt burden." (Kumar 2017.) The State utilities have been freed from 75% of their debt burden because the State Governments have taken over that debt burden. So, if one is talking about the debt burden on India's public sector, is UDAY really a great deal?

vii) Indeed, a flourishing industry has grown, focusing on how to steal power. This emerged in a study (Srikar 2014) done by E Phani Srikar, an electrical engineering student at the Indian Institute of Technology, Roorkee, under the auspices of the IC Centre for Governance and Rakshak Foundation in the summer of 2014.

viii) Take, for example, the case of Dakshin Haryana Bijli Vitran Nigam, one of the power distribution companies covered under UDAY. It charges the first 295 units of power for domestic use at the rate of Rs. 4.50 per unit, the next 197 units at Rs. 5 per unit, the next 491 units at Rs. 6.05 per unit, and the remainder at Rs. 6.75 per unit.

ix) "Loans and advances for power projects increased significantly as an outcome of the Ujwal Discom Assurance Yojana (UDAY) scheme. Under the scheme, states took over 75 per cent of Discom debt as on September 30, 2015 over two years – 50 per cent in 2015-16 and 25 per cent in 2016-17. States were allowed to issue non-SLR state development loan (SDL) bonds in the market or directly to banks / FIs holding the Discom debt. As per the RBI records, 8 states borrowed Rs. 989.6 billion under UDAY during 2015-16." (Reserve Bank of India 2017, paragraph 2.6.). Because of UDAY, the Government of Haryana's fiscal deficit rose from 2.88% of GSDP in 2014-15 to 6.49% of GSDP in 2015-16, 4.27% of GSDP in 2016-17(RE) and 2.84% of GSDP in 2017-18(BE). Without UDAY, the fiscal deficit numbers for 2015-16, 2016-17(RE) and 2017-18(BE) would have been 2.92%, 2.49% and

2.61% of GSDP, respectively. See Government of Haryana (2017, page 10).

x) For an excellent discussion on why politicians and policymakers in India behave the way they do when it comes to dealing with the issue of privatization of public enterprises, see Gupta (1996).

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Sunil Kumar

Individual, Institutional & Societal Ethics:

A Concept of 'Dharma'

Ancient Babylon's Building code:

"If a builder has built a house for a man and has not made his work sound, and the house which he has built has fallen down and so caused the death of the house-holder, the builder should be put to death!"

The various pieces of the Jigsaw puzzle of this unimaginably-vast-whole-universe are moving in a wonderful state of 'oneness, interconnectedness, interdependence and interrelatedness', of Rtm (rhythm), harmony, of 'perfection'.

A cosmic order seemingly conscious, holds it all together! Only we the human beings, have the freedom and option to choose to be either in tune or create a cacophony. Dharma or Ethics is that which is in Rtm with the cosmic order and takes us towards understanding this whole mystery of creation and gives us happiness too.

Who follow the principles, are the 'good'; they are in 'Sur', in Rtm, i.e. in harmony with the principles.

Those who don't are the 'Asur'! Those in governance have to be the 'Sur', not 'Asur'.

Need for Reengineering our Processes

In spite of well-known deficiencies in our systems of governance, why is it that our 'best' people, our political leaders and administrators, have somehow failed to tackle inefficient systems which do not deliver results but lead to corruption and unethical behavior? Obviously there is something very seriously wrong in our systems and processes and in our concept of 'best' because of which even our 'best' are unable to implement the corrective steps, as repeatedly brought out in various Reform-reports. Who is responsible for reforms: Politicians,

administrators, teachers, public, departmental-heads, everybody or nobody? Shouldn't departmental-heads be held responsible to identify, blacklist, and tackle inefficient and unethical people and systems?

Look at the comic paradox of our systems of governance created by highly intelligent and the 'best' people. The elected members represent a constituency and rule over the bureaucracy and together they govern us but none of them (maybe a few) have any long-term stake, nor are they directly responsible and accountable for delivery of results to the citizens! Leaders are the cause of good or bad Governance; however, no emphasis is laid on discussing how to be good, and then finding the good and nurturing and mentoring them to positions of power and responsibility.

The state of our governance can best be expressed through an ancient fable '*andher nagari chaupat raja, takey ser khaja, takey ser bhaji*' which depicts a young man who decides to stay in a kingdom where freebees, perks and handouts are available freely and systems are such that responsibility and accountability are vague! A wall collapses and someone dies. The government wants to be fair and just and so someone must be punished, but the problem is who; who is responsible? After a proper enquiry, the victim is found to be a beautiful lady who used to pass by the construction site and therefore distracted the attention of the project authorities. She is brought to be hanged but the hangman's noose is too big for her too slim neck, and so orders are issued to find a fatter person suitable to the noose, and a young man fattened with the freebees is found to be the right size! Systems which are unable to identify, nurture and place the good people at the top and fix accountability are bound to fail!

Similarly, the rot in our systems of governance is exposed in a simple and comical way in a Shyam Benegal's Film (2005), 'Well Done Abba' (with Boman Irani). It depicts the successful effort of government machinery to declare Boman Irani 'Below the Poverty Line', and then give him a loan of Rs. 135000/-, to build a drinking water well in a rural area. The officials, contractor and engineers prepare all documents and photographs to show that the well is completed and built; and, the Village Head's certification that the water is sweet.

Of course, there is no Well! Police is asked to register an FIR that someone has stolen their Well! They find they are not alone; money for 75 non-existing Wells has been totally eaten away!

We all recognize that the ideal structure of governance must be to gradually transform pyramid-hierarchical structures into small-self-managed units with total responsibility for specific well-defined tasks. These units could be in 'supplier'- 'customer' relationships where individuals and teams are delegated specific tasks and made directly responsible and accountable for producing results and getting payments in lieu thereof. In spite of knowing all that is wrong in our systems 'we' do nothing! Lack of proper and responsive 'systems', lack of commitment to duties, lack of striving for excellence, and lack of the spirit of service, poor productivity and poor work culture, are the most unethical practices in the government machinery. Our Institutional systems have miserably failed either to inspire people to fulfill their duties, or to fix responsibility and accountability.

Dharma is commitment to duties, and commitment to *kartavya-palan* alone is the passport and the first and foremost characteristic of Ethics and Dharma; ethical dilemmas, *dharam-sankat*, moral and conscience issues, unrighteous actions, are secondary, whereas breaking of laws, corruption, etc. are of course illegal. Ideally, a person who is negligent in performance of duties shouldn't be allowed to hold any position of power in government or in academia. Dharma is a holistic concept which when thoroughly discussed and understood as a part of our schooling and training and development efforts, inspires us to know and fulfil our specific duties in different situations.

On Being Ethical

All our educational and institutional systems must therefore be based and led by those who are committed to ethics in all their dealings. Allowing people in governance who are not fulfilling their duties is the root cause of rampant corruption and inefficient governance. Ethics itself is not the Goal; it is only a means to an end. If the end is not there why should we be ethical? Those Choices and Actions are ethical, which when followed, lead to the Goal. Aristotle explains Ethics as Matter of habit or a trained faculty of choice; he posits

Happiness as the only goal. The challenges before us are many. How do we select, train, evaluate, promote for excellence in governance? How do we educate, and develop people to be committed to duties; to know the role of our daily work itself, in either helping or retarding our growth towards 'perfection'? How do we determine who is good for which role? Should promotions be based on seniority or merit? Should we allow frequent transfers or provide stability? Are our systems able to find and punish the wrongdoers?

Employees should reflect on issues like: Does my role and duty in the workplace help me become good and better towards the best? Are my 'customers' my bosses or Citizens? Do I solve their problems or create them? How many changes have I introduced in my area of work to increase productivity and reduce corruption? People want to grow; Growth gives happiness! How can I "grow" and give people opportunities for their growth? Within our area of control, what can be done to improve productivity and curb corruption? Am I trustworthy? Who in the organizations is made specifically responsible and accountable to identify and report areas and systems which give rise to unethical practices and plug the loopholes? Heads, as well as individuals to whom power is delegated, should be duty bound to report areas and systems which give rise to unethical and inefficient practices and be held accountable to take steps to plug the loopholes.

Shared Vision

The crying need today is for good people who can create good systems for good of society as a whole. Indian wisdom offers the holistic concept of Dharma for individual, institutional and societal ethics, and advises us to 'earn' and 'enjoy' through dharma to remain on the critical path of 'dharma' to attain the highest human goal of peace, fulfilment, ananda, 'perfection'. We can understand the idea of dharma by asking and introspecting on the following questions:

- Am I fulfilling my duties to society, institution, family, self; am I committed to the Fundamental Duties?
- Am I striving for quality in work?
- Am I working for good of society?

- Am I growing in spontaneous feelings of love, care and concern for others?
- Am I striving to become good and better towards the 'best'?

While we can debate on the question of what 'good' means and how to identify, nurture, and nudge the young towards positions of responsibility, there can really be no doubt that only 'good' people must be our teachers, policy-makers, and leaders, and it is Dharma that encompasses the ideal of 'good' for individual, institutional and societal ethics. As Aristotle puts it, it is better to be governed by a *good man* than by good laws. Similarly, Vivekananda clearly states that the basis of all systems, social, political, administrative or academics, rests upon the goodness of man. No nation is great or good because Parliament enacts this or that.

Our Responsibility is to discuss and understand the concept of '*dharma*' which is a holistic guide for righteous conduct which when followed not only ensures guaranteed and consistent success, but also ensures that our decisions and actions result in our growth towards inner peace, joy and fulfilment. It is our responsibility as academia and governance to create institutional systems, processes, checks and balances which bind people to fulfilment of duties through dharma. Our systems should nurture and encourage locals to solve local problems, curb frequent transfers and tendencies of people to rise to their level of incompetence! If a person is desirous of money-making and desire fulfilment, it is better he remains as a result-producer and does not rise to his level of incompetence by taking on administrative and policy making responsibilities or teaching young minds, where he is unlikely to excel but is likely to be a menace to himself and to society.

Throughout history India was the No. 1 country in the world. Foreigners from all over the world came to partake in its glory, spiritual-culture, wealth and prosperity and to loot and plunder. The reason was that our "*Policy-makers and Administrators*", as Leaders**,** had created an environment and systems where our Result-Producers, i.e. "*Entrepreneurs and Workforce* (skilled & unskilled)" had autonomy and *worked together*. Our elders were magnets pulling people towards

fulfilment of their respective duties. There were well established Rules and Codes of conduct and ethics, to indicate the right way people should take decisions and behave and connect with each other in harmonizing and fulfilling the objectives of individuals, institutions and societies. They were all educated and trained to be committed to their *kartavya*, to excellence in work, and were inspired to have care and concern for each other and to strive to work for good of society in a spirit of *'tyaga and seva'*, and work as worship.

Governance is not easy

Hard ruthless decisions are needed. Those who govern should be able to set aside individual-vested-interests for the higher good of nation, society, institution, and like true soldiers, be ready to sacrifice their individual needs for societal good. Self-centered narrow-minded parties and people cannot visualize or take hard decisions for the long-term good of society; nor can they be fair, just, and impartial, in swiftly rewarding or punishing. Institutions are not just fixed rigid structures defined by buildings and organizational charts and departments; they are a network of people interacting with each other for a common goal and purpose based on certain rules and procedures, which again are proposed and monitored by people. And therefore, it is imperative that people who lead institutions must not just be 'good' and fair, but should sincerely strive to be better.

Importance of Dharma in the Workplace

Values, morals, ethics, righteous-conduct, kartavya-palan, fulfillment of our duties, excellence in work, work as worship, care and concern for each other, virtuous conduct, character, goodness, etc. are all synonyms of Dharma. It takes many pages in a dictionary to elaborate the many meanings of Dharma! Law, duty, religion, rites, code of conduct, human values, and now our Constitution and Fundamental Duties etc. all are encompassed by Dharma!

Essentially Dharma implies that work or action which leads to peace, prosperity, ananda, for self and for all. What is our Dharma in our various roles at work and in family and society should therefore be an integral part of all our education and training programs. Since

individuals constitute institutions and societies it becomes the responsibility and accountability of education and governance, of leadership, to create systems and procedures which inspire and bind people to their dharma; to the laid down codes of ethical conduct. Leadership must be held accountable to constantly identify and rectify procedures and systems, which lead to unethical practices in Institutions and societies. Of course, to enforce institutional ethics, leaders have to be ethical.

Dharma comes from the root 'dhr', to uphold, to support, to sustain – it is called dharma since it upholds the whole creation; it is dharma that upholds the beings of the world. That which upholds this projected universe, supports it and sustains it, without which the universe just falls apart, is dharma. In order to grow from inefficiency, disharmony, chaos, unhappiness, towards efficiency, harmony, order, happiness, we need direction, guidance, discipline, self-control, and will-power to walk-the-talk. And this guidance is dharma, whether as individuals, institutions or as a Society. Those who strive to know and walk-the-talk of dharma are in 'Sur', in 'harmony', and therefore the srestha, leaders and role models of society, the nation builders, whether workers, entrepreneurs, administrators, policy makers or *acharyas*, teachers. Those who don't are the 'Asur', not fit to be in positions of responsibility.

Vocation is Dharma

The word 'vocation' is a profound concept. When people engage in work, in a profession and occupation, that is based on their inherent calling, aptitude, talent, inclination, bent, urge, natural ability (synonyms of vocation) then we excel in that occupation and fulfil a need of society. Such work is our Dharma, it is life itself, not just a 'job', and so it leads to awakening of *viveka* and purity of mind. This would have been the idea behind our *caste* and *varna-ashram* concepts, i.e. when we engage in work according to our *swadharma*, our in-born tendencies, then our work itself leads us on the critical path towards happiness and perfection. Today we do 'jobs' beyond our levels of character and competence, out of necessity, or out of 'greed' for more money and status, not out of passion, not in a spirit

of *seva-bhava,* not as selfless worship to satisfy the needs of society, but for personal selfish reasons.

Work is Dharma

Dharma helps us attain that freedom which is the goal of all human beings through unselfishly doing that work where we can excel and can offer our best for good of society. Every selfish action and work not done to perfection retards our progress. And, every unselfish action, and excellence in work takes us towards the goal; that is why we can say, that which is selfish is adharma, unethical, and that which is unselfish is ethical, is dharma. Every good work we do without any ulterior motive, and every good thought that we send to the world without thinking of any return makes us purer and purer until we become perfect. Dharma is conceived as God himself who is fair and just, and since 'man has been made in the image of God' man acts as God when he knows and commits to *Kartavya-palan* and strives to fulfill his duties for good of society. Dharma is the basis of all *purusartha*, human strivings. As a member of an institution or society each of us have certain roles, duties, prescribed actions. When we selflessly perform the duties related to our roles, it leads to inner-purification, *chitta-suddhi*, and simultaneously contributes to well-being of society.

People tend to rise to levels beyond their Character and Competence. This mad rush to rise to our level of incompetence comes from the thinking of society as a pyramid or a giant wheel where those at the top are considered higher and those at the bottom are treated as lower! But if we look at vocation or caste as a horizontal merry-go-round, then we are all equal, though some are seated on chairs, some on horses, and so on, and we have to grow from where we are. Modern society posits that people are equal whereas common wisdom says: 'Never treat equal people unequally or unequal people equally, and we know from observation that people aren't born equal with a clean slate; each is born in different families, nations and circumstances and each has its own inherent, in-born tendencies, characteristics, aptitudes, abilities. Our systems of education, recruitment, evaluation, promotions, transfers, etc. are responsible

for corruption and unethical behavior because we allow people to rise to their level of incompetence! People expect delivery of results; they do not mind even paying bribes to get the routine work done. Schooling should help and guide us in a vocation in tune with our natural desires and abilities, Swadharma, so that in and through our work we grow towards Perfection.

To know our Dharma in different situations is not easy. It needs daily self-study, self-introspection and practice of self-development processes to awaken our Viveka, our powers of discrimination, to know our Dharma in various circumstances so that we may choose rightly and build the ability to do the 'right'. Our challenge is to supplement and complement modern IQ and 3R's education with education, training and governance which will produce the 'Sur' who can create systems, policies and procedures where people strive to know and become good and better towards the highest and best, in and thru' daily work and life.

Dharma alone is the cause of Happiness. Dharma literally means that which supports our inherent nature; like the dharma of sugar is to give sweetness. Since our inherent nature is of '*ananda*', Dharma is that, by following which, we are assured of perpetual '*ananda*'! While the idea of Dharma is a mental understanding, it has to be implemented in the battlefield of our daily work and vocation, and in our various roles. Therefore, it is important to do only such work which is in tune with our tendencies and where we can excel without undue stress. Dharma is that which when followed guarantees *sukha*; its application in life is what is meant by character. And, this Dharma is related to both the '*vyasthi*' (individual level) and '*samasthi*' (institutional and societal level). Dharma is there to govern the actions of individuals as well as his relationship with other *jivas, Jagat* and *Brahman*. All actions for fulfilling our desires and acquiring the resources to fulfill our needs and legitimate desires have to be governed by Dharma.

Living in this world and seeing ourselves as individuals, separate from everything else, we do all kinds of actions, karmas, in this world. The fruits or consequences of all our work, interactions and actions result in our experiencing '*papa-punya', 'sukha-dukha*, profit-loss, fame-insult and many such dualities. And this is what this '*samsar*', this world of

ours, is. During all these interactions, left to them-selves without guidance, all human beings pursue only *Artha* and *Kama*, acquiring resources to fulfil desires; and, this is our present chaotic state!

In and thru' all our activities we are really seeking to be happy, and our search for happiness is in the external world. Our immediate needs are not Dharma but we do want consistent success, peace, happiness, enjoyment, fulfilment, prosperity, etc. etc.! Wisdom of Vedanta reveals that the *source* of happiness is not in anything external, it is actually within us already! Our inherent unchanging nature, i.e. our *swaroopa,* is itself *ananda-swaroopa*! This profound idea, that I am the source of happiness, needs to be discussed and investigated. We were thinking that external things were the source and '*cause'* of happiness and now we are told that external objects are not the source or cause of happiness; Dharma alone is the cause of happiness! This needs more analysis. Every person has his own concept of '*sukha'* and this concept also keeps on changing. We also know from experience that the same object does not give permanent happiness. Moreover, in all these experiences of '*sukha*', there is always a mixture of '*dukha*', at least a fear that after sometime this '*sukha*' will end. We should therefore ask: Is happiness in the objects and things that I seek? When we reflect on this issue we suddenly realize that no 'object' can be the *source* of happiness, though it may be a cause to give us momentary happiness! Therefore, there must be some other source of '*sukha*' and this source and invisible cause of happiness, is Dharma. Therefore, for ensuring that all our work and interactions, all our thoughts, words, deeds, can guarantee '*sukha*' without '*dukha*', we have to be guided by Dharma, righteous conduct, human values. So far, we have discussed the concept of '*sukha*' in relation to things. However, there is the utopia of eternal happiness also which is free from all traces of '*dukha*' and which does not involve any other thing for happiness. This eternal happiness, which is independent of anything other than 'my-Self' is '*ananda*', it is my own inherent *swaroopa*, unchanging nature, and this is the ideal of Perfection, fulfilment, ananda and goal of work and of human life.

Education and Governance must take responsibility to awaken our Viveka and establish us in Dharma. Modern idea that each individual

is free to do what he wants to do is leading to a state of perpetual purposelessness. Freedom is not in doing what we want to do, but in not *having to do* what one wants to do! Only when we are not led by desires, can we pause, reflect, and learn to respond with win-win actions. Every moment we have to make choices and there are only two basic choices: short-term pleasures and happiness of the selfish '*Asur*' versus long-term good and ananda of the selfless '*Sur*', the *srestha*! Don't we delay gratification and wish for permanent over temporary joy and jobs? On what basis should we choose? How to know what is right or wrong? *Viveka* is the ability to think plan and act on the basis of long-term-good and is to be inculcated thru' continuous reflection. Suppose we ask: What are your plans for today? What are your plans for the next three-months, one-year, five years, twenty or hundred years? When we are made to think of a longer time span we have to consider many more things of which our knowledge is totally incomplete.

Only when we understand and can fix the ultimate goal of life, can we decide the good and bad, right or wrong and practice differentiating and choosing the long-term good over short-term pleasures. This is what the young should discuss and discover through reasoning. Our education doesn't awaken viveka. Our governance is dependent on elected members, who 'come and go' and 'rolling-stones' who are frequently transferred, and so grow no moss! The life of student is not just for learning the 3R's; it is the opportunity to get established in self-development processes to awaken powers of discrimination, 'viveka', and acquire the ability, strength and fearlessness to walk the path to the goal. We have to inspire students to get established in 'Dharma', *kartavy-palan,* through getting established in the habit of daily practice of Self-Development processes, Self-Study and introspection, prayers, meditation, to be practiced throughout life, in accordance with our respective religions. And, select those who are in '*Sur*' as teachers and leaders.

Education and training programs should encourage discussions on basic issues like the holistic vision of reality, of the ultimate purpose of work and its relation to the goal of life, our *swadharma*, our role and responsibility in different situations, etc. If we bring these truths

in the equation of planning our work, life and actions, then we will get a better picture of what is right and what is wrong. We can then harmonize our present actions through ethical conduct towards the aim of life. This healthy worldview of striving to become good and better towards the best must be taught to all, especially to teachers and leaders. Throughout schooling and in work life, we need to discuss, explore, know, and discover what choices and responses we should make in different situations. Awakening our *viveka* will enable us to make better choices and remain on the *critical path* of *swadharma* to our goal of Perfection.

Conclusion

Whatever may be our status and position, worker or leader, administrator or teacher, our universal goal is Perfection, inner peace and ananda, not material goods or status in society. Therefore, we must strive to be in '*Sur*', be the srestha, the elite, great and good, by sincerely striving to be good and better towards the best following our respective *swadharma*. Not freedom to do whatever one wants to do, but strict discipline and ruthlessness to deliver results, and weed out incompetency and corruption, i.e. dharma, is needed to achieve consistent success externally and peace and ananda, internally.

Kamal Taori

Convergence of Delivery Systems for Good Governance

Vision

"What is productivity but making the most of one's time and talent, and energizing the whole surrounding environment so that men and women are inspired and motivated; that is to make most of themselves, both as individuals and as members of society on all planes of living, thinking and acting: whether it is politics or economics or home, village or factory, life at the ground level or life of the spirit" *(Mohandas Karamchand Gandhi)*.

Rural Areas have traditionally been taken as caste ridden, illiterate, poverty stricken, poor in every respect where infrastructure, electricity, drinking water etc. are all missing. The fact remains that the rural areas have not marketed themselves effectively. If we accept marketing as essential for any sustainable development processes, then rural areas have not been able to market themselves from various angles. Marketing of place, product, target groups, ideas, visions, problems, processes, systems and even intentions must be considered in a functioning concept of marketing. By a very narrow vision of marketing, which only connotes to product marketing, a lot of harm has been and is still done. In the era of existing globalisation, the compulsion for localization is imperative and these changes have to be carefully considered.

The practical and philosophical dimensions of *convergence* with reference to rural India have unfortunately remained vastly unattended. Convergence of programmes, facilities, services, etc. have been ventured by many national and international institutions without any lasting success. Convergence would be a very good term but it requires clarity and brevity to make it understandable to the masses. Rural masses as a target group are very important

because convergence through single window services available to urban masses and the organised big industrialists have become, by and large, a reality but when it comes to rural areas *convergence* is still a mirage.

Development

All talks of development, especially about the unorganised rural sector, have remained a myth hitherto. Development may mean many different things for different people. That way, some may we have taken a step forward and thus developed. But we can also justifiably feel that our development has been lopsided, even gone in a backward direction, detrimental to what nature including environment protection would require. In terms of happiness, satisfaction, contentment and overall quality of mindset, we definitely have not made real progress.

Dimensions of delivery systems in rural areas

When we look at public service delivery system from a historical perspective, we know that reorientation of delivery systems for production, services, administrative and educational sectors which does not involve people in management, planning and convergence can never be successful. The responsibility of mobilising different service providers or delivery systems cannot be left only to government servants and funds. In the era of centralized top-down planning, thrust has been on delivery through government staff. Hence, whether it was agriculture, industry, banking credit, education, culture, sports, family welfare, land records, civil supply, policing and law & order or other issues, it was supposed to be provided by government servants and schemes. In some areas, they have succeeded but a time has come to examine these areas in the light of the following challenges or tasks to be taken up:

- Massive awakening
- Failure of past development models - proper documentation of examples of failures and successes to learn from is missing
- unavoidability of humane policies, humanity and human

rights must become supreme

- redundancy of established institutions
- all-round lack of faith or trust in government institutions at all levels
- dwindling resources of the State
- Overstaffing and poor work culture in State organizations
- neglect of community values and traditional hereditary practices
- realization that a balanced society cannot be held together by religious factors
- compulsions of global vision and local action (GVALA)
- awareness of women's rights and neglected/exploited groups
- impact of financial issues on development, including security in old age (insurance)
- need to involve people, community and all stakeholders
- sustainable perspectives for rural youths (for example: jobs, education, health, etc.)

Many of these challenges are unique and unparalleled. There is no historical semblance, hence, we have to look for new models for effective functioning, timely corrections and self–supporting planning and research systems by using all-inclusive development potential.

Lessons of the past

Whether it is socio-economic or any other sector we find, especially with reference to rural areas, the delivery systems have been managed, funded, trained and monitored by highly compartmentalized – thus totally ineffective – "Joint Secretary Syndrome". The Panchayati Raj institution has now, for the first time, been enjoined upon to ensure convergence. States like Uttar Pradesh have gone one step ahead and tried to pool various rural functionaries into single window service providers. This has been done without increasing any manpower or even budget for effective convergence. By just convergence, one village has now one or two services providers functioning at

the village level who attend to 10-12 different departments. Many objections have been raised. But the fact remains that if we want systems to be properly managed and not continuously manipulated, then it is high time to understand the necessity of convergence for efficiency in rural areas. Furthermore, the work level and expertise required at village level is so basic that no specialized service provider is required. Another provision may be that the local Panchayat can hire local expert's services if justified. These will definitely lead to real Gram Swaraj if the following policy issues are observed:

1. Training after holistic principles, i.e. all-including
2. Shift from charity and donations to sound, commercially viable, non-exploitative, sustainable enterprises.
3. Self-employment and rural investment models.
4. Rewards as per performance/merit
5. Local resources utilisation
6. Quality product services and local demand.
7. Clarity on issues like bankability, quality and efficiency of technology.
8. Learning from past combined with Continuous Improvement Processes (CIP concept)
9. Developing clusters of mutually benefiting enterprises – for example rural godowns - and building up local expertise on the principles of global vision and local action (GVALA).
10. Paying attention to Hidden investible Potential Power Organisation (HIPPO), Known Investible Power Potential Organisation (KIPPO) and Threatened Investible Power Potential Organisation (TIPPO) regularly.
11. A lot of harm has been done by neglecting traditional expertise and importance of local servicing at low cost.
12. The role of local leaders developed in the past decades must shift from grants to business or from greed/loot to equality. Here policies must play a very decisive role.
13. Hope generating signals or parameters have to be continuously searched. Can one believe that in UP there are thousands

of villages where no law and order problems have been reported? Can one believe that no incentive, reward or even a good word has ever been given by anybody? The areas of rewarding good work need to be explored and utilized for motivation and hope-generating.

14. The permanent civil servants and their work culture with reference to convergence of delivery systems in rural areas need to be studied from the grass root angle. By encouraging the State to take up all duties and creation of the cadre of government employees, with their powerful unions, hardly any justice has been done to Low Cost High Impact (LCHI) system development. Even the voluntary organisation system has been infected by this decease.
15. Over-dependency from the State for everything cannot be changed overnight. The existing policies have been such that dependency always paid. Even not returning bank loans is acclaimed but now it is the right time to ensure reversal of this process through suitable policies for transparency. Where are the group rewards or group punishments?

The Role of Panchayats

Panchayati Raj has a very important role to play. Hence, all systems must be organised and geared to make them functional, progressive, analysable and capable of taking all steps of confidence-building in all local residents. Panchayats have been looked upon as the extension of exploitative systems. It is high time that the Panchayat evolves as important partner in constitutional governance at the lowest level and is accepted as such. This means efficient decentralisation, delegations, funding and encouragement to converge with better policy and appropriate training. There is a growing realisation at many levels but the crux of the problem is: how to go about it? For example, when it comes to law & order or policing, are we prepared to encourage those villages, which have crime free record of many decades? Or, if some villages have no record of diseases or bad recovery of loans, are we prepared to encourage them? Same way with reference to unemployment, go-downs, infrastructure, are we

prepared to delegate? Can our laws, rules & regulations be changed to make them fully empowered? Isn't it a fact that nobody wants to share power and authority? Hence, can we now think of making things hot through efficient accountability and responsibility fixation that institution are forced to delegate and share with panchayats not only resources but also accountability. Can good performing rural institutions of community, of village or of group be encouraged to resort to self-help? Can the funding system be so developed that performance is encouraged and no-performance is punished? How do we look into issues of learning to working together with transparency, bankability, viability and right attitude tuning in? The system of transfer of knowledge or systems where ashramvyavastha (system) was ensuring continuity of training, research, irrespective of caste and creed needs to be examined. Can there be volunteers as teachers so that the missing linkages of personality development, decision making capacity, continuous upgradation of abilities to visualize challenges and develop systems for uninterrupted upgradation and transfer of knowledge in all walks of life is possible? These questions have to be looked into today as a part to convergence of delivery systems in rural areas.

Self-employment – Rural investment and efficient delivery systems with cost efficiency

The emphasis of State-led extension, godowns, infrastructure, training, marketing, production and many other areas have made people totally dependent on the state. One feels that the whole confidence and capacity of self-employment has withered away. Obviously, since all these have happened, then the policies of the State whether of policing, funding, rewarding, punishing etc., should be put in the foreground.

In many more progressive and developing States the *dependency syndrome* exclusively on government has been reduced. Many companies as a part of aggressive marketing have trained their dealers and stockists to also provide low cost practical consultancies. This cadres of LCPCs have not only close proximity to the target group but is also always willing to learn and experiment with new developments in

their respective fields. Local agents should be trained on these lines because the LCPCs only propagate the interests of their respective – non-local, urban-based companies.

The following are important fields where the potential of self–employment and rural investment (SERI) needs to be suitably encouraged through policy support.

- Animal husbandry and related fields
- Agriculture and related fields (value-adding activities)
- Organic farming (ecology-based enterprises)
- Environment protection-related issues (Renewable energies, Waste to Wealth, Biomass plants, recycling)
- Water preservation and harvesting
- Information technology
- Health issues (extended Primary Health centres, sports, nutrition, hygienie, Swachh Bharat…)
- Training, research and extension
- Financing and deposit
- Insurance and project making
- Marketing and infrastructure provisions (eradication of middle-men system through IT)
- Minor irrigation and construction
- Maintenance
- Organic housing
- Education of all types (from pre-primary onwards)
- Many more areas of potential development where global vision and local action (GVALA) becomes viable.

Role of Training, Research for Action and Documentation

While lessons of the past help us in developing plans of action for the future, the areas of action in social, economic, education, health, or any other field for that matter make it imperative that the training aspect is not neglected. It is a fact that this aspect has not received the

attention it would require. Maybe the systems have been encouraging exploitative, manipulative, organized and unionized activities in usurping the legitimate dues of the unorganized, the dispersed and even the traditional self-employed. Without questioning the unjust advantages of the Reservation system, the new directions and methods for participation and control of delivery systems for the rural population make it imperative that the Reservation system is to be abolished so that sustainable development can take place. We cannot afford to stay mired in conditions which are barriers to development in continuously making the same mistakes.

Bottlenecks and prescriptions for inducing change

Once we understand the nature of target groups, lessons of past, compulsions of politicians, etc., then it should not be very difficult to identify the bottlenecks which will come into any process of change induction. The potent change agents will always have open discussions, flexibility, cost efficiency and inclusive approach in any change prescriptions. Let us identify the favourable aspects, which will help facilitate or even compel this change. Among them, the dwindling resources of the State, poor work culture, lack of confidence in State and the overall attitude are all forcing to accept change. At the same time, bottlenecks coming from non-performers, from poor accountability, lack of marketing culture, dependency on the State, indifference to unorganized sector, ignorance, etc. are the factors to be kept in mind. The vested interests, organized voters and lobbying may be another area which will act as bottlenecks.

The potential of the unorganized or dispersed or decentralized can be strengthened with active involvement of Panchayat Raj movement. The women, the self -employed, the unorganized, etc., as and when they realize their hidden potential, there will be no stopping them. It is here the information technology in the right perspective and context has to play a very important role. The administrative system which is otherwise accountable only to a few if at all, indirectly becomes self-accountable. The participation of the poor through their own organisations and associations in the management and convergence of hitherto neglected areas can be efficiently tapped. It

is here again that the role of voluntary agencies, retired people, para-professionals and other community compulsions can be efficiently mobilised and galvanised to make the delivery systems efficient and self-supporting. Every generation has to find itself what is best for the country. Hence, no amount of traditional systems should remain unquestioned. While on the one hand critical examination of traditional systems has to be a scientific and rational process, simultaneously effort must be on to look for relatively cost effective, localised, self-sustainable systems for convergence of delivery systems in rural areas. All departments and institutions must examine zero based budget potentials. Ruthless pruning, decentralisation and better systems management is a must. People have to be empowered to take responsibility and suitable systems development for that empowerment is a must.

Points to Ponder for Action

When it comes to reflection in the right context of past, present and future it is felt that rural areas have not received attention they deserve. It is not the question of money or programmes only but the whole attitude, policies, technology and systems whereby they get empowered. Since many of the programmes are now becoming market-oriented and opening up of economy predicts reduction in grants and self-dependency, the profit element becomes a motivating propellant. It is here the risk areas of competition, competency, skills, constant lookout for emerging opportunities etc. become important. These tasks cannot be left to government or grant-based NGOs or even to insensitized functionaries. It is here the robust networking and constantly searching for new investment opportunities, innovative local resource optimization and full employment potentials have to be put in action. The thrust areas of "back to basics", excellence in operation, respect for innovation, synergizing of all strengths in organisations, mindset for co-operation and constant search for competitive, compatible areas of action with preference to socially neglected groups etc. becomes very important. The unleashing of hidden potentials and energy of people with dynamism require some demonstrable models. Areas which are not glamourised, less glamourised and non glamourised whether in posting or transfers

need to be documented. The vigilance angle has to shift from preventive to proactive. There are some areas which are constantly bound to be corrupt in present circumstances. Many areas will always be non-attractive. How do we analyse this from the vigilance angle? Can we have voluntary sectors where knowledge and wealth could be shared without charity? Can commerce propel business for all? Can public good and private good be reconciled? Can dormant institutions be revitalised through doses of internal resource generation?

There is a saying that "When the going gets tough – the toughs get going." Probably time has come when toughs will have to get going by realising the tough and challenging time of tomorrow. The brain storming at every level is required to identify processes of change. The secrecy and delay, ignorance and insensitivity will all be got over as implementable ideas get on the ground. From talking to acting, thinking to implementing, dying to living, unnatural to natural, shifting processes are bound to come. Here, the continuous process of rewarding those who are managing sustainable change even in these days need to be analysed. There are no soft options. Let us get ready. Let us provide enabling environment so that the future generations do not get a reason for blaming us. Convergence and capacity with confidence-building is a process which will change the whole setup.

Time and tide waits for none. India is very fortunate country where the traditional and modernity can be blended. The element of DADI (Dwindling Accepted Down Investment) are still very much to be seen and felt. The low-cost – high-impact traditional practitioners of various conversable programmes, when properly involved, can definitely achieve a high quality of life. The simple people, the simple solutions, simple technologies are to be involved with simple policies in the convergence of delivery systems. In the process of convergence, priority must be given to the following factors:

- Internal resource generation
- Population control
- Basic education
- Self-employment

- Value addition of rural raw material and local storage
- Law & order: crime-free village or no litigation or no FIR
- Recognition of sportspeople and artists
- Rural resources utilisation, NRI-involvement, exports, total literacy, equal chances for women in all aspects
- Involvement of senior citizens
- Environmental factors, like social afforestation, renewable energies, water preservation, organic production, Swachh Bharat, etc.
- Utilisation of surplus land.

Conclusion

The convergence of delivery systems in rural areas is a must and requires initiative also from very high level to understand fully the issues in planning action, research, codification, extension and loaning (PARCEL). Needless to say, many of our originally good programmes have failed miserably in the past because of lack of transparency. This means, everybody from top to bottom has to be fully involved in the PARCEL process so that the speed is not lost due to lack of transparency. Hence, parliamentarians, bureaucrats, civil servants, retired people and panchayat raj officials, bankers, chartered accountants, insurance companies, have to be immediately brought on a common platform to work out modalities of learning to work together for a mutual win-win. The role of appropriate quality training is very important in facilitating all these at the earliest.

B.K. Taimni

Ethical Dilemmas in Public Service

"The Light of God surround us,
The love of God unfolds us,
The Power of God, protects us, and
The Presence of God watches over us".

There are three words/phrases in the title of this paper – 'Public Service', 'Ethics' and 'Dilemma', each having a very significant role to play, in the 'scheme of things'. To begin with, the premise for discussion is 'Public Service is a Public Trust'. Citizens expect Public Servants to serve 'Public-Interest' with Fairness, and manage Public Resources properly on a daily basis. Fair and Reliable Public Service inspire Public –Trust and create a favourable environment for business thus, contributing to well-functioning markets and Economic growth. Public Service Ethics are a pre-requisite to, and, under-pin Public Trust and are a 'keystone' of Good Governance'. Based on the experiences of several developed and developing countries, including our own, we may look into the factors that go in to the making of an effective and comprehensive ethical management policy.

In the public domain, normative nature of 'Ethics' tends to be in the frontline of Ethical reasoning. Consequently, Public Servants usually understand Ethics, to be a set of prescribed and commonly shared 'values and standards' relating to the following:

- Trustworthiness- (in the form of) honesty, integrity, reliability and loyalty;
- Responsibility- (in the form of) Accountability, pursuit of excellence, and self-restraint;

- Fairness (in the form of) - open and un-biased process, impartiality and equity;
- Respect (in the form of) - civility, courtesy, decency, tolerance and compassion; and
- Rules of Conduct- especially those regarding financial gains, use of public –resources, transparency, accountability and fair process.

These are some of the ingredients/factors, guiding our obligatory, permissible and prohibitive official conduct in the Public Service. Invariably, visible and demonstrable, due compliance with ethical values would go a long way in bolstering public confidence and trust in public services, while the contrary shall erode the confidence and trust in public services.

Late Sh. Shekhawat, former Vice President of India, while delivering a lecture on ethical governance said, "Let me begin by stating that the reputation and success of governance depends upon the conduct of public functionaries and what the public believe about their conduct. It is therefore of fundamental importance that public functionaries act justly and fairly to all, and not only paying lip service to ethical conduct, but ensuring that these are manifestly and undoubtedly seen to be done. It is imperative that all public Functionaries, upon accepting Government Employment recognize that they have a special duty, to be open, fair and impartial in their dealings with Society. Personal self-interest should be subordinate to the Public good in all circumstances, especially if circumstances arise, where possibility of a conflict of interest may become an Ethical – Dilemma".

The question then arises is, "What is Ethics?"

In a general sense, Ethics could be said to be the equivalent of "moral principles" and values, that govern the behaviour of a person or a group with respect to what is right or wrong. Ethics sets standards, as to what is good or bad in conduct and decision-making. In other words, ethics deals with internal values that are part of work – culture and shapes decisions concerning social - responsibility with respect to external environment, and come to assume much greater significance, when it is known, that the actions of a person of organisation may

hurt or benefit others.

Viewing Ethics in this light indicates that people are faced with choices, requiring them to make decisions enabling them to lead an ethical life, within the context of their relationships with others. This also suggests that people can be placed in ethical dilemmas. An ethical dilemma is a complex situation, that often involves an apparent conflict between moral imperatives, in which to obey one would result in transgressing the other. Ethical Dilemma arises because Ethical Standards are not codified, and disagreements and dilemmas about proper behaviour often occur. An Ethical Dilemma arises in a situation when each alternative 'choice' or behaviour, is undesirable, because of potentially harmful consequences.

When confronted with the fundamental question, what to do and how to act in complex situations, and to the extent contrasted values or decisional premises could apply in a situation, one is entering the WORLD OF DILEMMA or that of' HARD CHOICES'? Accordingly, Ethical Dilemmas do arise when a Public Servant –decision-maker has to choose between competing considerations of Ethical –values and Rules, in order to determine the right thing to do. These Dilemmas could broadly fall into three categories: -

- Personal Cost Ethical Dilemmas, arising from situations in which compliance with ethical conduct results in a significant personal cost (e.g jeopardising held position, injuring valued relationship) to the Public Servant, or the decision maker.
- Right –versus Right Ethical Dilemmas, arising from situations of two or more conflicting sets of bona fide ethical values (public servant's responsibility of being open and accountable to Citizens versus that of adhering to oath of secrecy/ confidentiality etc); and
- Conjoint Ethical Dilemmas, arising from situations in which a conscientious public servant – decision-maker is exposed to a combination of the already mentioned ethical dilemmas for the "right – thing–to-do".

Frequently encountered ethical dilemmas tend to arise from three critical relationships-

- Civil Servants and Political Office holders;
- Civil Servants and Citizens; and
- Intra – Civil Service (Ministries, Departments and Agencies, that make up the Country's or State's Civil Service.

Classical cases arise from the management of the relationship between the Minister, the Political – Head, and senior Officials at the level of Secretary, Additional Secretary or Head of the Department. Conventionally, the Minister is the Political Head of the Ministry accountable to the people through Parliament/State Assembly. Before assuming Office, the Minister subscribes to adhere to the provisions of the Constitution and publicly expresses commitment to uphold it with a view to preserve and enhance Public confidence and trust in the System.

On his part, the Secretary of a Department is the Chief Policy Advisor, to the Minister as, also the Chief Executive, to execute the decisions taken at the Political level. It should not be forgotten that, as a Civil Servant, he is obliged to abide by the Conduct Rules and other rules/Regulations in this regard, while demonstrating unflinching loyalty and commitment to the Minister.

However, in practice, while discharging their duties and responsibilities, situation(s) may arise, triggering conflict between the Minister and the Secretary and other Senior officials of the Ministry. The Minister could be under pressure for material and/or pecuniary demands from his political, social or from his Constituency. For political expediency, he may feel obligated to meet the demands. Consequently, he may decide to ignore the Ministerial Ethics and transfer the demands to his departmental Secretary or other senior Officers, with a directive to oblige. But it may be clear that meeting such demands may lead to violation of the acceptable accountability Standards, practices, as well as administrative ethical principles. My experience is, that if you stand your ground, and explain in detail the fall-out on the Government as a whole, Political Bosses could reconsider, what they 'ordered', in –writing.

Here I would like to give a personal example: -

"Way back in 1979, I was suddenly transferred, as Additional

Commissioner Raipur Division, which was considered a 'dump' post. My job involved hearing Cases (Revenue- Matters), against Orders passed by District Collectors/additional Collectors, of Raipur and Bilaspur Division. After about eight months, I was brought back as Special Secretary, Agriculture in Bhopal and the very first file I get from my Minister, was to organise sending two 'Train-Loads' of Farmers from Raipur and Bilaspur Division to Delhi, with the ostensible purpose of, 'learning some- thing from Indian Agriculture Research Institute. I had read in the newspaper a day or so earlier, that a Congress Party rally was being organised in Delhi by the than 'Youth' Leader. Being fully conscious of the fact that I had just been rehabilitated from a 'dump-post', and could happen again, I took the file to the Minister. He asked me what was wrong with the 'proposal'. Is there not a Scheme of the Government to this effect? I explained that there was a Scheme, under which, farmers can be sent, but, I have also read that there is going to be a Congress Rally on these very days in Delhi. He asked what was wrong? They will attend and learn at IARI as per its Programme, and afterwards, they can do whatever they like. I then mentioned that, when Shah Commission, appointed after the 'Emergency', enquired of the than L.G of Delhi, as to, was he not aware of the implications of what he was doing or permitting it to happen during this period, referring to the excesses being perpetrated during this period? L.G had no answer. So sir, knowing that a Party – rally is taking place at the same time, when the farmers from the State are proposed to be sent, if I am asked to explain, I will have no answer. The discussion went on for about 40-45 minutes, and when he saw, that I am not giving – up, he said, Leave the file with me., which I did, and nothing happened afterwards.

The question is:

- Would a refusal to oblige the Minister's Directive not displease him, thereby straining the relationship, between the two? Would a protracted conflict, arising from such incidents not stunt the delivery of the Ministry's/ Department's mandate, thus adversely affecting the image of the Ministry, with a collateral damage to the required public confidence and trust?

- Would succumbing to the pressures of the Minister, with a view to pleasing him, not lead to violation of the acceptable 'accounting standards and practices', as well as 'administrative Ethical principles, thereby derailing country's crusade for sound Public- Service ethical fitness?
- Would such an act not be inimical to the overall image of the Public -Service?

These sort of situations, lead the Senior Officers to Ethical Dilemmas In such situations the Civil Servant, has to consider: -

- Striking a balance between his responsibilities as a Senior Officer, and that of the Minister, as the Ministry's Head, to avoid a unnecessary conflict;
- Uphold the rule – of- law, due process, firmness, fairness and tact in carrying out the responsibilities; and
- Uphold the highest administrative, financial, ethical and moral standards in the Civil Service.

It needs to be appreciated, that the application of these optional principles by the officers, is not always easy for resolving the Ethical – Dilemmas that confront them. While the first option mentioned above, i.e the option of striking a balance may be a euphemism for acquiescence, the other two options are squarely all about maintaining Integrity, and perhaps not caring for the consequences. However, very tactful Secretaries do manage to get the Ministers to commit all their demands in writing in such a way that puts potential culpability on the Ministers. In this way, Ministers, with excessive tendencies for unethical actions are checked within the boundaries of the Law.

It also needs to be appreciated that ethical Dilemmas may always not be caused by a conflict between a Civil Servant and his Political Head. It could also arise among Civil Servants. The best thing in such a case is to put everything in writing, explain orally the Dilemmas emerging out of it, and' get- order,' in writing, to carry out the direction, while taking full responsibility for the follow-up action(s).

It also needs to be appreciated that Ethical Dilemmas are not germane to senior functionaries alone. They are equally and perhaps more importantly germane to the levels of Public Service, who deal

with public at large. It is in this context and background, that we need to ponder over, how to rise to the occasion and wade through the Ethical Dilemma. We could consider the following 'advanced' set of 'Fundamental – Principles', or criteria, that integrate and rearrange, the process of dealing with Ethical Dilemmas in Public Administration: -

- Democratic ACCOUNTABILITY of Administration;
- The Rule of Law and principle of' LEGALITY; and
- Professional INTEGRITY.

This may conveniently be described as the- ALI- model of Ethical reasoning in Public Administration.

The Imperative of ACCOUNTABILITY

The distinction between Politics and Administration, which forms one of the most classic 'doctrines' of modern Political Science and Public Administration, connotes not only 'division of Functions and their structural separation', but also the 'subordination' of the latter to the former. Thus, the primacy of 'politics' in the Politico-Administrative nexus explains the ultimate political control or rather Governmental control of the Administrative machinery of the State in a Democracy. The loyalty of the Public Service to the Political Masters is grounded on the obligation of the Ministers in Parliamentary Democracies, to be answerable and responsible to the Legislature (Ministerial responsibility to Parliament). It is only by that means that the Ministers, being Representatives of the people of the nation, may hold the Public Service accountable, to the will of the people and general interest.

It is then the fundamental ethical duty, bearing on Civil Servants in pluralistic Parliamentary Democracies, to subordinate themselves to political authority, to carry out all 'orders' from the 'top', as long as they are as per Law. In the same vein, the Public Servants would have to show a spirit of 'neutrality' in their official capacity and dealings, as members of Administrative infrastructure of the State vis-a vis Partisan politics, and keep at bay their own personal preferences in the performance of their duties and responsibilities.

The conclusion that may be drawn is, that 'Democratic virtue' does form part and parcel of the Core-values and 'normative-determinants 'of Administrative behaviour in the public-domain-namely, that the Administration should be held 'Accountable' to the Government, and through it to the people via Parliament i.e. the House of Representatives of the people. It also needs to be stressed, that this does not amount to , and cannot be taken to mean the politicisation of Public Services and more specifically, does not give a 'licence' to the Political Masters to pass orders, contrary to law/rules/ public interest, and expecting the Public Servant to carry them out blindly, because that would undermine the Instrumental value of the Executive branch of the Government and Administration. If a Minister still insists on carrying out his Orders, which the Public Service does not find palatable, in the light of Law on the Subject or any hidden -agenda behind the order, then the best option open to the Public Servant is to get the Orders in writing, and in case of disagreement on the part of the Public Servant, record his views in writing, and resubmit the file to the Minister. 'Speaking Truth to the Power' can be considered as a important ingredient of Professional Ethics and moral integrity of Civil Servants and the administrative machinery of the State, in general.

The imperative of LEGALITY

The Rule of Law, besides being one of the fundamental evolutionary –universals, in both modern Politics and Society, pertains in a very specific and significant way to 'Administrative -conduct'. Respect and adherence to the Principle of Legality manifests a 'spirit' of Constitutionalism and forms an essential pre-requisite for the 'legitimacy' of the State action, and the exercise of authority.

Respect for and application of the Principle of Legality entails a particular type of control on Administrative action and aims to see that Public Administration operates within the context of the Law, established by the Legislature (Parliament). Since the source of all power is ultimately, the People, in a Democracy, hence it follows that, all power must be exercised in the name and general interest of the people. And for that to take place, in an effective rather than

an arbitrary manner, the running of the business of the State has to be guided and determined by an 'articulate' system of Rules and Laws. Their application, while performing official functions, forms the essence of Legality and Rule of Law. The control of Legality of Administrative action, initially exercised by the Administration itself, purports to ensure, that proper procedures have been followed and observed, as well as that equity, reasonableness and impartiality have been respected. It is in these circumstances, that the artful application of the Principle of Legality in Administrative performance would go a long way to serve and promote Rule of Law, and avoidance of 'abuse of power'. Only decisions/actions, taken, following above, will help the Public Servant withstand, in a positive manner, any 'scrutiny' by a Court of Law, at any 'stage'.

The imperative of INTEGRITY

The State's "Guardian Elite", is comprised of the body of Civil Servants, permanent Officers subordinate to Ministers. Civil Servants are expected to be fully competent on the basis of their ascertained knowledge, experience and expertise, and independent enough to offer 'official' advice to Ministers as well as implement public-policies and decisions in an efficient and effective manner in the public-interest.

The application of knowledge and science in Public affairs has been historically related to the advent and increase in professionalism, in their exercise. Professional Integrity entails that, while Public Administration may be brought under Political guidance and control, but it cannot and must not be forgotten that Public Servants are recruited and trained to appreciate that they serve under the Law and in public interest, and not on the basis of partisan favouritism. Professionalism in Public Service could then be seen to accrue from a combination of knowledge, of expertise, of judgement, and conduct in accordance to the laid-down and expected standards, as well as a commitment to the cause, they are assigned to work for.

The imperative of Integrity, constitute therefore, a source of 'internal self-control' in administrative conduct, based on ethical standards and criteria shared and respected by the corps of

professional Administrators. Avoiding, for instance, corruption and exhibiting Integrity would then be for them a matter of personal and professional honour and prestige, in a culture of Ethics, and not simply an externally imposed obligation. In order to facilitate and uphold the Integrity in Administration, several countries have developed and laid down 'Code of Ethics for Public Servants', thus imposing on Public Servants certain rather austere standards, and requiring that they uphold and respect them in their conduct. "Integrity in life and pure from crime", as Horace put in one of its Odes, would than seem to offer an appropriate definition of the Ethical imperative for the Public Servants.

Summarising, it can be said that the people who work in Public Service Face Ethical –Dilemmas, many a times, and it is imperative that that you rely upon your Inner -strength / inner voice to 'guide' you, which shall never be wrong. It is the' Conscience' ie the Light of the Soul, that burns inside your heart. It is this little spark of Celestial Fire. It raises the Voice- in- protest, whenever anything is thought of or done contrary to the interest of your inner voice/ conscience, because conscience is the voice of the SELF, which says 'yes' or 'no', when you are involved in a moral struggle, which is what an Ethical Dilemma is. Conscience is the internal monitor and is a form of truth which is the knowledge of our acts and feelings, as right or wrong. This is a very sensitive balance, to weigh actions. It is a guiding voice from within, the faculty or principle by which we distinguish right from wrong. We must understand that, Sense of Duty is Conscience. Scrupulousness is Conscience. Conscience is a silent Teacher and guide. It is a needle that points steadily to the pole-star" Do this action. It is right" It warns you also "this is wrong, do not do this"

You may suffer the consequences for some time, but as they say, when you 'live' your 'second –innings', you can than look back with great satisfaction, as to what you did. When people hurt you, you just think of them as 'sandpaper'. They may rub and scratch you painfully, but you end up 'Smooth and Polished', while they end up 'worn-out' and of no further use. In the end, I would like to state: -

"Flowers blossom even in forests, where there is no body to admire

their Beauty. Let us continue our Good-work honestly, even when nobody appreciates us! Never Expect 'Things' to happen; Struggle and make them happen. Never Expect yourself to be given good-value; CREATE VALUE OF YOUR OWN. Your luck is not in your hands, but you can 'impact' your work. The Good work you can do make your Destiny, but your Luck alone cannot make you do good-work. SO ALWAYS TRUST YOURSELF".

Yogendra Narain

Civil Society Transforming Noida

The growth of Noida, located on the outskirts of Delhi, exhibits a new genre of planned growth. The influence of the Delhi metropolis on the economic, social and cultural life of the people living in Noida is natural. There is an umbilical cord between Noida and Delhi. After all, Noida was created in 1976 primarily to accommodate the non-conforming industries of Delhi. Noida subsequently became the dormitory of Delhi. But today it stands as a unique example of an independently planned industrial township with emphasis on preservation of the environment, rapidly developing infrastructure and availability of public services through the use of the internet.

NOIDA, acronym for Noida Industrial Development Authority, was established in April 1976. The area on which this Authority was established, was prone to floods, had minimal agriculture and few industries. The UP State Industrial Development Corporation was already working in Surajpur which was outside the territorial limits of Noida. Power was supplied as per hours fixed for rural areas

NOIDA was created under the UP Industrial Development Areas Act. The present Master Plan administers about 20,316 hectares and the notification covered 81 villages. The population today is about 10 lakhs. According to the Master Plan, the residential area is to be 37.45 %, commercial area 3,8%, industrial area 18.37%, public and semi-public facilities 8.89%, transportation 12.71%, recreation/greens 15.92% and other users 2,86% This Act provides for an Authority under a Chairman, who is the Secretary, Industries Department, of the UP Government. Every time a new Chairman is appointed, he

is also designated as a Secretary to the Government of UP in the Industries Department. The Act does not provide for any public representative on the Authority. There are a number of ex-officio members like the Finance Secretary, the Industries Secretary, the Planning Secretary, the Secretary, Urban Development Department and so on.

The demand for representatives of the people to be on the Board has been raised from time to time. However, the Government has always been taking the view that this is an Industrial Authority charged with the responsibility of developing industries and therefore there is no need for a public representative to be on the Board. It is neither a Municipal Board, nor a local area authority. No House Tax or Water Tax is paid by the citizens living in Noida. 'No taxation without representation' is the norm there, implying that since there is no taxation, there is no representation!

In 1991, the State Government, building on the success of Noida, conceptualized the development of another authority, named as the Greater Noida Development Authority. The villages which were acquired by the Authority, lost their Panchayats. The villages which were not acquired but still came within the notified area of the Authority were allowed to retain the Panchayats and their elected representatives. However, the Board of the Authority continued to be a Board of officers only. Later on, the Yamuna Expressway Authority was conceptualized and started as a separate organization. All the three authorities were included in a separate district named as Gautambudh Nagar. This District now has a District Magistrate, a Senior Superintendent of Police, and three Chairmen. There are three Assembly constituencies but no MLA is on the Board.

Meanwhile, the authorities continued with the development of the industrial township. New industrial plots were allotted together with new residential areas. Residential towers came up to adorn the entire skyscape of Noida as well as Greater Noida. The officials stuck to their area development plans duly approved by the Planning authority of the State and did a magnificent job. Noida became an example of a well-planned city. It has better infrastructure, better roads and well-developed parks as compared to the other cities in Uttar

Pradesh. Though there was no public representative on the Board, the vigilant press gave expression to the demands of the public. The officials responded and the local MLA's and MP's also added their voice to the demands of the public. Whenever officials attended public functions they were given several demands and were asked to respond. Conscientious officers lived up to their promises.

Initially, there were two vocal sections in the population – namely the industrialists and the residents. The Authority encouraged both sections to form Associations which could give a representative character to the demands. In Greater Noida, the GNIDA was formed- the Greater Noida Industrial Development Association. In Noida, there was an existing NEA- the Noida Entrepreneurs Association. As far as the residents were concerned, the Authority encouraged the formation of a Resident Welfare Association (RWA) in each sector. Later the RWA's joined together to form the FONRWA- Federation of Noida Resident Welfare Associations. Furthermore, this Federation joined with other Federations to form CONFRWA- the Confederation of Federation of Resident Welfare Associations. Thus, representative bodies were formed outside the official bodies and the development authorities encouraged and promoted interaction with them. Civil Society was thus given a formal voice. However, as Noida developed, and more people from different walks of life began to live in Noida, demands arose of varied nature. They revolved around the growth of cultural life in the areas covered by the three Authorities, better connectivity with Delhi and neighboring districts, improved health and sanitation facilities, metro services and transport services to connect maximum sectors of the district.

A strong NGO movement started in Noida and Greater Noida. The local citizens, a substantial number of which were retired government officials, actively joined these NGO's. The Authorities also encouraged the NGO's and gave them positive encouragement. One of the prominent NGO's, the Noida Lok Manch, headed by a former Cabinet Secretary, Prabhat Kumar, was tasked by the Noida Authority to run the Noida Public Library, the public cremation grounds called the Antim Niwas, as well as some schools. One after another, prominent retired government servants joined the NGO.

Wives of these officers also actively joined the NGO and participated in running the schools. This NGO also raised funds for the victims of the Uttarakhand tragedy and also started computer training for the youths of Uttarakhand. Similarly, when the earthquake tragedy occurred in Nepal, this NGO sent truckloads of food and blankets to Nepal. The Lok Manch now has got a community radio license which is located in a village. This Community Radio is making people aware of government programmes and is also popularizing the traditional local music of the area. Local people actively participate in these Radio programmes.

Four years ago, some prominent citizens of Noida conceived of a plan to hold an Annual Conclave wherein the citizens could directly interact with the officers of the three Authorities and convey to them the demands of the residents. The three Authorities cooperated. The State Government also sent its officers to participate in the Conclave. The pattern of the Conclave is threefold. Every year, four topics are selected for panel discussions by the Advisory Committee of the Conclave. Experts are then selected to prepare concept papers for each panel. The Advisory Committee also selects experts who would participate in each panel. Each panel also has a rapporteur who is charged with summarizing the discussions in each panel including the final recommendations of the panel. A chairman is also appointed for each panel to conduct the panel discussions.

Participants from the public are invited to participate in the panel discussions. Every panel discussion ends with a question answer session in which the citizens ask questions from the panelists as well as the Authority officials. It is ensured that the Authority officials dealing with the panel subjects are present to make the citizens aware of the steps they are taking to meet the demands of the public. After the conclave ends, a summary of the recommendations is prepared by the organisers and sent to the concerned authorities as well as the State Government.

Throughout the year, the Secretariat of the Conclave pursues the implementations with the concerned Authorities. Often the Chairman of the Advisory Committee of the Conclave, who is himself a retired Chief Secretary of the State, has to telephone the concerned officers

to ensure the expeditious implementation of the recommendations. The Conclave is supported by an efficient Secretariat, under the supervision of the Greycell advertising company headed by a local activist, Trilok Sharma, and a dedicated team led by his son Vikas. They have been residents of Noida since its establishment in the seventies and feel responsible for the development of this region. Having a local resident sponsoring this Conclave is of great advantage as they know the local residents of the area and also those who could contribute to the discussions on the selected topics.

It is relevant to mention here that the finances required for holding this Conclave are raised from the three Authorities as well as some local industrialists and few Government organizations. During the Conclave, lunch and tea are also provided to all invited delegates. The Authorities find the Conclave a convenient forum to announce their plans and future policies. They also receive feedback from the participants, which helps them to modify their future programmes. In the first Conclave held in February 2014, apart from the inaugural session, which was presided by Sri Prabhat Kumar, former Cabinet Secretary, the issues taken up were as follows:

1. Governance and Law and Order in Noida
2. Development of social infrastructure
3. Development of Industrial infrastructure
4. Transport and connectivity

More than seventy recommendations were made in this Conclave. As the Chief Secretary UP, Sri Alok Ranjan, was present, he reacted to some of the suggestions on the spot itself, which gave strength to the Conclave. He announced *inter alia*, that

1. A new Industrial Policy is being conceptualized and the suggestions given in the Conclave would be taken into consideration.
2. Modernized police *thanas* will be set up in the Noida region with more efficient and victim friendly staff.
3. Intelligent traffic systems will be set up.
4. Improved modern fire tenders will be provided to cater to

the safety of the high-rise buildings.

5. Modern AC Buses will be provided to make the daily mobility of the commuters more efficient and comfortable.
6. Solid waste management and sewage systems will be set up.
7. Water and power supply problems highlighted in the Conclave will be sorted out.
8. Night Safari project would be finalized and implemented very soon.

Similar assurances and statements of future policies were given by the invited officers like Chairman Noida, Superintending Engineer Hydel, Transport Commissioner, Senior Project Engineer Noida, and others.

1. In the conclave held in 2015, the topics chosen were,
2. Promoting Skilled development, Investment and Employment Opportunities.
3. Promoting Arts, Culture and Tourism.
4. Role of Civil Society and Governance
5. Environment, Health and Sanitation.

In this Conclave, the Chief Secretary UP was kind enough to be present together with the District Magistrate Gautambudh Nagar. The private sector was present in large numbers apart from individual citizens and representatives of the RWA's. Similarly, in the 2016 Conclave and the 2017 Conclave different topics were chosen *viz.* Infrastructure Development, Vocational Training, Disaster Management and Environment, Village Development and Socio-Cultural Harmony, need for Metro transport, Art and Culture etc. The success of these Conclaves was measured from the action taken by the concerned authorities on the demands raised in the Conclaves.

In the last Conclave held in January 2017, the Chairman of Noida and Greater Noida Authority, Sri Rama Raman, reacting to the recommendations of the panel discussions on Art and Culture, announced that an organization along the lines of the India Habitat Centre, would be set up in Noida by 31st March 2017. He followed it up by immediately drafting the Memorandum of Association

and Rules and Regulations for the proposed Center and asking for comments. The Noida Authority also took the initiative in taking out a booklet on the action they have taken so far on the recommendations made in the successive Conclaves.

Role of The Resident Welfare Associations (RWA's)

Noida comprises of about 150 Sectors. Similarly, Greater Noida has sectors named as Alpha, Beta, Gama etc. Each sector has been encouraged, by the development authorities, to form a Resident Welfare Association, to look after issues pertaining to civic amenities and development work in their respective sectors. With a view to look after common issues, such as, provision of civic amenities, law and order problems, traffic management etc., concerning residents of Noida city as a whole, the Federation of Noida Resident's welfare Associations (FONRWA) was formed in the year 2001. The Authorities also cooperated and gave a building to FORNWA for its official use and for holding meetings. Later on, FORNWA acquired a double story building, which also houses a Library on the ground floor.

There is no municipal authority in Noida and all the functions for provision of civic amenities, development work and welfare measures have been vested in the Noida and Greater Noida Authorities. All policy decisions relating to the development of the area are taken by the Noida Authority. However, with the formation of FORNWA, 38 issues were identified by the Federation and taken up with the Noida authorities. This included conversion of Noida land into free hold; amendment of Building bylaws, extensive cleaning of drains; regular fogging; eviction of encroachments; DND to be made toll free etc.

FORNWA also took up matters relating to security with the police. Police officials have cooperated. They also took up issues with the State Government, where it involved Government intervention; with the District authorities regarding regulation of hikes in school fees, preparation of electoral rolls, etc.; with the Power department on issues relating to implementation of the 24-hour supply of power in Noida. It must be accepted that the Resident Welfare Associations are

the basic building blocks for community building, self-management and direct democracy. They can give expressions to civil society consensus; they provide the third tier of our constitutional polity and decentralize democratic governance at the level of micro urban communities

Conclusion

Civil Society in Noida has actively come forward to fill in the gaps created due to the absence of public representatives in the Noida Authorities. But if one were to distinguish why civil society has succeeded here, one can identify the following factors:

1. The officers who manned the Authorities were willing to give importance to the views of the NGO's.
2. Due to the constant pressure of the NGO's and with support from the media, the Authorities felt compelled to act on the recommendations made.
3. Civil Society representatives took up only community issues and never individual issues.
4. In the Conclave, the officers faced the public directly and found it a good forum to explain their view point. They also received appreciation for the good work done by them.
5. The presence of senior officers from the State capital helped the local authorities in taking decisions.
6. The very fact that before the next Conclave, they would be asked to report on the action taken on the previous year's recommendations, persuaded the concerned authorities to act expeditiously.
7. The Conclave Secretariat was vigorously pursuing the recommendations at all levels.
8. The presence of senior retired officers in the NGO'S as well as in the activities of the Conclave, gave credibility to the recommendations.
9. The officers of the Authorities also stay in Noida and many of the officers have settled here, post-retirement. They can

be promptly approached by their neighbours and friends for problem-solving purposes.

10. By and large, the authorities have acted in a non-political and independent manner.

The working of the Noida Authorities has shown that administration can be successfully carried out without political representatives as long as the senior officers are willing to listen to the concerns of the citizens. It has presented an alternative model of development to the rest of the country which can be successfully replicated elsewhere.

Anil Chowdhry

Making Policing in South Delhi Citizen-Friendly

As a former member of the police force, I am quite understandably quizzed at every social gathering in Delhi, on why our policing cannot be made more citizen- centric. Honestly speaking, I have very few explanations to offer. Being an optimist, I see glimmers of hope in improving policing at the initiative of young leaders at the local level. These are visible even in the neighborhood in Delhi where I now live. Have been observing in the past one year or so, a few small, innovative initiatives, mostly IT-driven, to make policing more citizen- friendly in the South-East Police District of Delhi, especially in the two key areas of improving police presence /response and delivery systems among the residents.

The DCP of the district has devised, with the help of a very reasonably priced (within his limited financial powers), software available on smart phones of all Beat police men to identify and photograph senior citizens, strangers, taxi / auto drivers, hawkers, suspicious persons, domestic helps, drivers etc in their beats. The smart phones were provided to the Beat staff free of cost by a leading manufacturer of cellular phones as a token of appreciation for recovery of such phones worth crores of rupees stolen from its warehouse located in the district. The data generated by the Beat staff gets linked to a centralized base and helps in keeping a tight grip over crimes and criminals.

Further, for improving the response time of the mobile patrolling staff and to keep a check on their activities, GPS has been installed in 85 vehicles including 17 Emergency Response Vehicles (1 per police station) and 68 patrolling motorcycles (4 per police station). All these motorcycles are available on the Beat net and their real time position can be monitored live on the LED screen installed in the control room of the district.

More recently, the DCP has devised and implemented a system whereby help calls to 100 in PCR pertaining to his District get diverted directly to the concerned Beat staff, instead of being received by duty constables at PSs. This saves precious response time. This was followed up by reducing the number of Divisions, each under the charge of two SIs and allocating a dedicated mobile phone number which remains with the S I s / HCs present in the area, at all times. Transfers, leave etc would not affect the functionality of this number.

Very attractively designed cards captioned **Police Help at Your Door Step: We Respond Swiftly**, giving this number and cell phone numbers of all officers of the P.S. are being distributed from house to house. In addition, the DCP has got serially numbered cards issued to all senior citizens. "Apki Police Apke Saath" is an apt slogan coined for this scheme. Finally, he is trying to improve visibility of P.S. staff in public areas by insisting upon patrolling being done by all staff including the SHOs for a stipulated minimum number of hours daily, which supervisory officers are able to monitor through GPRS devices on their cell phones.

Two other initiatives *viz.*, an Android based GPRS driven App calling upon all to register to become part of the Delhi Police efforts in checking breaking of laws on the roads and public places and an effort to make police functioning less centralized around SHOs by devolving responsibilities among the Divisional Beat police officers are both under trial.

I am happy to share that I came to know about these measures from the Beat HC and PCs of the lane we live in, which means that these have percolated down to the cutting edge of policing viz., the Beat Constabulary. As a senior citizen, I feel safe and as an ex-policeman, I feel proud of the innovative initiatives of the young IPS Officer in whose district I live. We need more officers like him to bring policing out of the heaps of public mistrust and apathy.

COMMENT

Rajiv Sachdeva

Make in India

Make in India is an initiative launched in September 2014 by the Government of India to encourage national and foreign companies to manufacture products in India. 25 key sectors have been identified. These include electronics, IT, automobile, renewable energy, oil and natural gas, pharmaceuticals, defence, textiles, etc. The initiative aims to:

a) Transform India into a global manufacturing hub with state-of-the-art infrastructure and logistics.

b) Attract capital and technological investments.

c) Increase the manufacturing share in GDP to 25% by 2022 (present 15%).

d) Create 100 million new jobs by 2022.

e) Enhance skills of its huge and relatively-young workforce to the best of international standards.

f) Usher in a new era of digital technology and connectivity.

g) Make India into a leading exporter of high quality, environment-friendly and competitive products.

Complementary initiatives to construct 5 major industrial corridors spread across 15 states, build 100 Smart Cities, generate 170 GW through renewable energy, upgrade and expand rail infrastructure, enhance India's defence preparedness, etc. are expected to provide a major thrust to Make in India.

The Government also plans to set up a National Industrial Corridor Development Authority (NICDA). NICDA will be headquartered in Pune and would serve as the nodal body to coordinate and monitor the work related to the development of industrial corridors and

thereby drive India's growth in manufacturing.

The National Manufacturing Policy envisages to set up 11 National Investment and Manufacturing Zones (NIMZ) to facilitate manufacturing activities by providing world-class infrastructure. They will be governed by simple and transparent rules and guidelines without bureaucratic hurdles.

To address the concerns and scepticism of global investors regarding Quality, Safety, Health and Environment, the Government has created the slogan "Zero Defect Zero Effect" to identify and provide a direction to the type of manufacturing practices it has envisioned.

Before launching the initiative, various measures were taken by the Government to make it easier for foreign companies to do business in India. These include, for example, the relaxation of foreign equity caps in several sectors, simplification of procedures, online application of licences etc. As a consequence, the rating of India in the 'Ease of doing Business Index' has improved in 2016 by 4 positions to 130 out of 189 countries.

A 'Make in India Week' was held in February 2016 in Mumbai. It was attended by Government delegates from 68 countries and business teams from 72 countries. At the end of the event, the Department of Industrial policy and Promotion (DIPP) declared that India has received investment commitments of $ 230 billion, with more than 50% in Maharashtra alone.

Foreign companies have shown particular interest in manufacturing electronic hardware (mainly smart phones and other communication equipment), Automobiles and Defence equipment, including fighter aircraft, in India. These include Foxconn, the world's largest contract electronics manufacturer from Taiwan, with an investment plan of $5 billion and General Motors from USA with $ 1 billion. Lockheed Martin (LM) and Boeing intend to manufacture F16 fighter jets in India.

During the 18-month period (October 2014 to March 2016) after the launch of 'Make In India', FDI inflows have increased by 37% reflecting the confidence reposed in the Indian economy by the international business community. Before the demonetization of the

high currency notes in November 2016, practically all international rating agencies had forecast a stable GDP growth between 7.5 to 8% during the next five years for India.

Two major happenings, which took place on the same day (November 8, 2016), are likely to have a significant impact on the Make in India programme. These are,

a) The election of Donald Trump as the president of USA may have a dampening effect because of his election promise to bring back jobs to America. In order to secure jobs at home, he is vehemently against outsourcing manufacturing to foreign countries. This may put companies like Apple, General Motors, Boeing and Lockheed Martin under pressure.

b) There are conflicting opinions on the cosequences of Demonetization.

The positive view is that the huge amount of capital inflow into the banks will reduce interest rates, make borrowings easier and thereby spur the domestic manufacturing growth. Increased access to banking will increase the productivity of micro, small, and medium enterprises (MSME), and aid the Make in India initiative. It is worth noting that until now only 5 percent of MSMEs had access to institutional finance, underscoring the need for financial inclusion to drive India's growth agenda.

Furthermore, increased banking activities and digitization will improve transparency, reduce corruption and bring more money into productive circulation. Consequently, India's rankings on major global barometers such as Corruption Perception Index and Ease of Doing business may see significant upgrading. These in turn would raise the business confidence of investors and encourage Foreign Direct Investment (FDI). On the other hand, demonetization has reduced consumer spending and sent shock waves into the Indian industry. For example, mobile phones sales have dropped almost 50% since demonetization. Many of them were being purchased in cash. As a consequence, mobile manufacturers are laying off sizeable amount of their workforces. Foxconn has retrenched 25% of its workforce while leading local players such as Lava, Intex and Karbonn are planning

10 to 40% layoffs. This could be a setback, even if temporary, for the Make in India initiative. This manufacturing erosion must also be seen in the backdrop of the fact that 90 percent of all transactions were hitherto in cash. The brunt of the impact of demonetization has fallen on the informal sector, which accounts for 80 percent of all jobs, where 85 percent of the workers were paid in cash.

In addition to the above, there are several other concerns and challenges which need to be overcome. Some of them are as follows:

a) The global picture is not encouraging. There is weak economic growth and underutilized manufacturing capacity, particularly in China.

b) The world exports are growing at a slow pace of less than 3% per annum. Under the circumstances, it will be difficult for India to dislodge countries like China, South Korea and Taiwan who have already established a substantial lead.

c) During the last 25 years, India has oriented itself strongly towards the service sector. MSMEs are increasingly turning towards services to grow. Young entrepreneurs are also concentrating on start-ups mainly in the service industry. The policies to encourage manufacturing need to be urgently revamped. These include, among others, land and labour reforms, a robust banking system, a faster and more responsive judiciary, eliminating layers of bureaucracy, scrapping outdated procedures and improving health, safety and environmental guidelines.

d) India has not been adequately focussing and investing on research programs and development of indigenous technologies. It continues to depend upon imported technologies. This vulnerability could eventually prove detrimental for the sustainability of Make in India program.

e) India still has a lot to catch up as far as manufacturing technology is concerned. While India is focussing mainly on traditional manufacturing and conventional skill sets, the

world is already in the midst of a new industrial revolution, popularly referred to as Industry 4.0. The future belongs to Totally Integrated Automation, Robotics, Internet of Things (IOT), 3D Printing etc. which require completely different infrastructure and skill sets.

f) One of the stated objectives of the Make in India program is to increase employment. This may be difficult to realize because extensive automation and robotics are likely to render many jobs and skills redundant and irrelevant.

g) The Government is faced with a hostile Opposition which is either delaying or blocking the passage of key reforms that are crucial for the growth of the Indian economy.

Despite the complex framework of challenges and uncertainties, the silver lining for India is its huge domestic demand which is largely unfulfilled. Therefore, even if the global scenario remains grim, the Make in India initiative can nevertheless succeed on the basis of local demand provided the full potential of the Indian entrepreneur is unleashed through the speedy and efficient implementation of reforms, the accrual of the promised benefits of Demonetization and the unshackling of business from the stranglehold of a crippling bureaucracy. Fortunately, this Government is well-meaning and enthusiastic and the Prime Minister himself is personally spearheading the initiative with passion and dedication. In the true spirit of cooperative and competitive federalism, many of the states are also making vigorous efforts to attract capital and enhance manufacturing capacities.

The need of the hour is to relentlessly pursue the course of disruptive reforms and implement them efficiently. Let the coming years be an era of constructive turbulence which will be remembered as India's transformation from a poor and developing country to a leading industrialized and developed nation.

BOOK REVIEW

An Alternative Philosophy of Development
From Economism to Human Well-being

Birendra Prasad Mathur
Published 2017 by Routledge
Pages: 248
Price: INR 850
ISBN: 9781138282889

Growth, development, well-being of a country, are very often judged by GDP and of its people by the per capita income. All countries, developed and developing, have had development as the main objective as its policy and in India, too, regardless of the party in power, has had development as its main agenda and measured by the concept of Gross Domestic Product (GDP).

Birendra Prasad Mathur, in his latest publication, 'An Alternative Philosophy to Development', questions the approach of measuring development on the basis of GDP growth as a definite measure of a country's success in policies and offers an alternative development philosophy. The fetish with GDP growth as a main indicator of the success of economic policies can have disastrous consequences for the common person, as it ignores its impact on the individual's economic and social well-being. The current system of measuring GDP counts armament production, conflicts and cigarette advertising as part of economic growth while house keeping, volunteer work or child rearing is ignored.

The author observes that seven decades after independence, India is not a hospitable place to live in and the vision of a happy and prosperous society has been eluding us. He has tried to present a philosophy of development whose foundation should rest on India's cultural ethos and public policy should promote egalitarianism.

Development means different things to different people. What has

been the secret of development in many countries of the West and even in countries like Japan, Taiwan, Singapore, South Korea and now China has been the seven pillars of science and technology, meritocracy, pragmatism, culture of peace and understanding, rule of law and making education accessible to everyone. Gandhi, on the other hand, felt that economics cannot be divorced from ethics and his perspective did not view development in the narrow sense of GDP growth but essentially in terms of human development.

According to Mathur, a lack of emphasis on agriculture has been the main cause of poverty and unemployment. It is wrong to believe that agriculture cannot be a source of prosperity for this country. Also, micro, small and medium enterprises (MSMEs) account for 45% of the manufacturing sector's output, 40% of its exports and contributes 8% to the country's GDP and provides employment to 60 million people. It is the development of this sector that can bring well-being of a large number of people. The author pleads to create a favourable regime for the manufacturing sector to grow and thrive. He has dealt with the question of the current ideology and its problems, the perils of the free market and environmental unsustainability of India's economic growth. He highlights the ecological disaster, the inequality in society, consumerism and unemployment, particularly of the educated youth.

The author feels that our obsession with GDP growth should end and we should be more focussed on economic well-being. Quality of life depends on objective conditions and opportunities available to people. Most of the ills of modern economic development are the direct and indirect results of the narrow, non-ethical character of economic sciences. Both capitalist and socialist paths of development have failed. He refers to the Nordic social democracy models which are at the top of everything, from competitiveness to social health and happiness, while good governance is increasingly being realised as the primary reason behind the success story of the West.

Mathur, in the last part of his book, brings culture as the foundation of development and looks at a spiritual and humanistic approach to life. He emphasises that creating wealth was part of the Indian cultural tradition and quoting Chanakya, says,

"Dharma is the root of happiness
Wealth is the root of Dharma
The State is the root of Wealth."

He laments that India is losing its cherished values and people are becoming worshippers of material wealth. In spite of physical well-being and intellectual growth, people are inwardly poor and unstable and concludes that "it is time we reinstitute spiritual and cultural values in a society and synthesise them with modern democratic values and scientific temper so that an egalitarian, just and prosperous society is created."

Divided into four parts and eighteen chapters, the book is a very well-researched document and has tables of updated data and information up to 2017. It has well-defined references with a useful index making it worth the reading for not only research scholars but the lay intelligent reader as well.

Mahesh Kapoor

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Rameshwar Dayal

Librarian

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