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Information And Communication Policy In Korea: Lessons For India

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In 2012, the United Nations e-government survey ranked South Korea at the first position in the e-government development index, a distinction it has held for the past several years (UN 2012). The achievements of South Korea in this regard have been laudable since it has been able to reach this status in a relatively short period of 4 decades. The reasons for success of development of IT infrastructure and services in the country has been a clear focus and vision, centralized leadership, strategic planning and strict implementation. India needs to adopt the method of chalking out clear cut goals and making implementation time bound, while factoring in various social and economic diversities in devising of strategies to achieve the goal.

History Of Development Of ICT In Korea And India

The evolution of Information and Communication Technology (ICT) policy in Korea has been in three broad stages.

The first of these was the National Basic Information System (NBIS). This was from the period of late 1980s to mid 1990's, before the mass spread and popularity of the internet. The focus of the government was on using Information Technology (IT) to computerize internal business activities and reduce paperwork. However, the government demonstrated vision in using this stage for future strategic planning: a 10 year National Plan for computerization with 5 focus areas (National Administration Information system, Defense information system, National Security Information System, Financial Information System, Education/research Information System) and databases on basic information like citizen records, finances, banking, land records, etc Presidential leadership for national IT strategy and policy was developed.

With the rise of internet penetration, the focus shifted to providing services to citizens and businesses. The second stage (mid 1990's to mid 2000s) was

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that of building a nation wide ICT infrastructure (optical fibre network) with the aim on online service delivery. Again, this was achieved through strategic planning– a Comprehensive Plan for Korea Information Infrastructure was developed, which laid down key strategies and programs. This phase was that of KII and 11 e-gov initiatives. Under KII, from 1995 to 1997, 80 call zones were connected, optical fiber connected to government buildings and 2.5Gbps connectivity between Seoul and Taejon provided. From 1998 to 2000, they connected all 144 call zones with an investment of 147 billion won, connected 30% of households with (Asymmetric Digital Subscriber line) ADSL and Community Antenna Television (CATV). From 2001 to 2005, the connectivity was upgraded to tera bps and broadband services provided to governments and public institutions- all schools were connected by the year 2000 and 30,820 institutions connected with 37,036 lines by mid 2004. Under E-gov initiatives, the government focused on redesigning systems to exclude redundant and overlapping activities, developing cross-agency systems and processes with the aim of improving service delivery and reducing operating costs and prioritizing the highest payoff initiatives. 11 E-government initiatives were developed - National Finance Information System, National Education Information System, Personnel Policy Support, Local Administration System to ensure transparency and efficiency in the government sector; Government Portal, Social Insurance Service, Home Tax service to provide quality public services; National E-procurement system to enhance business environment and e-documentation, digital signature and seal, government information system and consolidation to improve IT systems and processes. Laws and regulations were also put in place to provide a secure IT climate - The Framework Act on Information Promotion was enacted in 1995 and the Electronic Government Act in 2001.

The third phase, that of constructing an E-Gov roadmap (2003-2007) and following that to achieve the status of a 'Smart Govt' (2011-2015) the aim is to move from the 'islands of automation' to 'whole of government', to provide integrated services across ministries and agencies in a more citizen-centric manner and to become a knowledge society. This is to be achieved by comprehensive reforms in government work processes by streamlining processes and information sharing, in Public service delivery by enhancing online service delivery for citizens and businesses, in Information Resource

management by standardizing information resources like databases and as a result, the E-government user take up increased from 41% in 2007 to 60% in 2012. (Oh 2012)

To some extent, there has been a similarity between Korea and India in the stages of development of IT enabled services and applications. Dr. D.C Misra, an eminent E-Governance consultant and chairman of the task force for IT policy for the government of Delhi has identified 3 stages of the development of e governance in India. The first stage, from 1947-1984, was not strictly of e-governance but that of use of computers for storing information which was used as an input in national policies. From 1984 to 1995 was the era of growth of computers and software, when the PC machine was used for office automation. E-governance actually came from 1995 onwards with the use of the internet and online services delivery to citizens/businesses, etc. (Misra 2009).The website of the Ministry of Communications and Information technology states that "e-Governance in India has steadily evolved from computerization of Government Departments to initiatives that encapsulate the finer points of Governance, such as citizen centricity, service orientation and transparency" (Ministry of Information Technology website)

Though the centralized planning has been adopted, implementation of goals is yet to match the speed with which commensurate development has taken place in South Korea. The National e-Governance plan (NeGP) in India was approved in 2006 (Ministry of Information Technology website), while in Korea the National Computerization plan was adopted two decades earlier, in 1987 (Oh 2012). India's National e-governance plan comprises of 27 Mission Mode projects and 8 components. However, complete financial support is not ensured - "The Government has accorded approval to the vision, approach, strategy, key components, implementation methodology, and management structure for NeGP. However, the approval of NeGP does not constitute financial approval(s) for all the Mission Mode Projects (MMPs) and components under it." (Ministry of Information Technology website). The timing apart, learning can drawn from some technological developments initiated by Korea which can and should be replicated in India. These are: (a) development of a National Optical Fiber network and (b) Common databases.

National Optical Fibre Network

In 2011, the National Optical Fiber Network project was approved by the

Central government. It envisaged linking up 2.5 lakh Gram Panchayats with broadband connectivity of 2 Mbps through optical fiber at a cost of approx. Rs. 20,000 crore. The aim is to construct technical infrastructure which links grass root level public institutions (Gram Panchayats, Health Centres, village schools, etc) which in turn will provide a (vehicle) for both the government and private companies to ensure service delivery in the rural areas like "e-education, e-health, e-entertainment, e-commerce e- governance etc." to people and businesses. The funding of the project is through the Universal Service (Ministry of Information Technology Annual Report 2011, p12) Obligation Fund (USOF), which is along the lines of the pattern followed in South Korea whereby special funds were established to promote ICT. A Special Purpose Vehicle (SPV), funded by the Central government and certain Public Sector Units (CPSUs) has been established to implement the project. (Ministry of Information Technology Annual Report 2011)

Common Databases

It was during the first stage of development of ICT services, that of the NBIS in Korea that databases were established with a view to implement citizen services by means of information technology and e-government initiatives through delivering services in public offices connected to back end databases. In the 3rd Phase of the e-government roadmap, the aim was to move from departmental resource management to government wide management and individual standards to common standards. Common databases played a vital role in achieving this aim – it integrated government services across ministries and agencies in a more citizen-focused way and was part of establishing a government wide EA and information resources sharing system. DC Misra has stated unequivocally that "Databases are at the heart of governance" and has recommended strengthening them. (Misra 2009)

Feasability of the Application in India

Social Effects: Equity and Access

Equity and access will be an issue insofar as basic literacy and computer literacy is concerned. In Korea, the literacy rate has been nearly 98% since 1995. Compare that to India's literacy rates which stand at 74% in 2011, and the challenges to empower the people to use IT services are apparent. Furthermore, not just literacy, but computer literacy will also be a cause of concern. In 2012, while the sheer number of internet users in India was larger

than Korea (121 million and 40.3 million respectively), the percentage users vis-a –vis the population was 1% in India compared to 82% in South Korea. Language will be a challenge as well - South Korea is a linguistically homogenous country and the Korean language is spoken by majority of the population, except for around 20,000 Chinese settlers. In India, the linguistic variation is mind-boggling and will provide a challenge for the development of common databases. Also, state wide IT penetration and achievement also varies significantly. Special efforts will have to be made for the states lagging behind.

Issues in Implementation

Capacity building of both government employees and citizens is an issue. There is an especially an urgent need to upgrade the IT skills of government employees. While policy guidelines for this should be framed by the This can be done at a decentralized level through the state administrative training institutes and also through partnership with private companies/ consultancies like Tata Consultancy, etc. Misra has also recommended investing heavily in Human Resource development as an engine of growth. (Misra 2009)

Regional variations in coverage, capacity and infrastructure development need to be addressed through ramping up IT development in the states lagging behind in a quick, time bound manner.

Fiscal Effects

Fiscal effects of the proposed initiatives will not be huge. IT may involve heavy investment in the initial stage for infrastructure development, but in the long run, it significantly cuts down the costs of administration by simplification and speeding up of processes and record keeping. The department of IT already has provided a budget outlay of Rs.20,000 crore for the National Optical Fibre network. Development of common databases will require primarily investment in software. This can be done by the Central government. The budgetary requirements of capacity building can be met by the state governments at their level and/or with partnership with the private sector.

Political Context

The political feasibility of the proposed steps is an issue in the present context where IT has become a symbol of development and modernization. There has been no record of any political opposition to implementation of

ICT policies in India. On the contrary, the political section has recognized the indispensability of IT in ensuring delivery of services to citizens and ensure transparency and efficiency in government functioning. In this context, there is a political premium attached to implementation of IT enabled services and infrastructure. Therefore, the political class will wholeheartedly support such initiatives. In fact, following the pattern in Korea, there should be strong emphasis from the Central government for all departments at both the Central and State level to move towards e-governance and online service delivery, and this should be monitored closely by the Central government.

Modifications To Suit The Indian Context

Given the small size and relative homogeneity of South Korea as compared to the size and tremendous diversity of India in terms of size, geography, population, economic development, literacy rate, IT penetration, etc, a multi pronged strategy has to be adopted in India to ensure that all citizens are able to benefit from ICT technologies.

- Convergence of technologies

  Given the poor internet penetration (10.2% according to the Economic Times) in India, service delivery can be ensures not only through personal PCs but also through convergence of alternate ICT technologies like mobile phones, internet kiosks, broadband connectivity of all public institutions, etc.
- Development of a policy for mandatory training/capacity building for government employees
- It should be made mandatory for all government employees to acquire skills and knowledge in IT and use of computers and this can be linked to service benefits like promotions, etc. A clear cut policy and training modules in this regard needs to be developed by the Ministries of Personnel and Information and Communications Technology in consultation with all stakeholders.
- Common databases need to be developed in a time bound manner. The requirement of software development and financial investment can be met by the central government.
- Development of software and/or provision of its translation in all major languages of India is to be done by the Central government to ensure access on the non English speaking population to online services.

Conclusion

South Korea provides a good learning experience for India in the use of ICT technologies for overall citizen empowerment and economic development through formulation of clear cut goals and timebound implementation through centralized institutions. However, the strategies India devises need to be guided and monitored by the Central government through appropriate institutional, legal and financial support while flexibility and regional participation and ownership has to be built in to these strategies to account for the country's diversities and inequities.

References

Ministry of Communication and Information Technology, Department of Telecomminications. Annual Report 2011-12. Available at mit.gov.in/ content/ annual-plans-reports

Ministry of Communication and Information Technology, Department of Telecomminications. National E-Governance Plan. Available at http:// deity.gov.in/content/national-e-governance-plan-negp

Misra, D.C. 2009. Evolution of e-Governance in India. Available at http:// www.slideshare.net/DCMisra/misradc2009-evolution-of-e-governance-in-india-1947-2009

Oh, Dr. Kwangsok. 2012. ICT policy for improving public services in Korea. Presentation given by Dr.Oh during training session organized by KDIC for IAS officers during 23rd July to 3rd July 2012 as part of Phase III Mid Career Training Programme

Sengupta, Debjoy. Apr 10, 2012. India achieves a 10.2% internet penetration rate. Economic Times. Available at http:// articles.economictimes.indiatimes.com/ 2012-04-10/news/31318824_1_internet-users-penetration-number-of-facebook-users

United Nations e-Government Survey 2012.Available at http://unpan1.un.org/ intradoc/ groups/ public/ documents/un/unpan048065.pdf

https://www.cia.gov/library/publications/the-world-factbook/geos/ks.html

http://www.indexmundi.com/south_korea/literacy.html

http://www.mapsofindia.com/census2011/literacy-rate.html

http://www.internetworldstats.com/top20.html

Analysis Of Korean Compulsory Elementary Education System: Lessons For Qualitative Improvement In SSA

Prashant Kumar *

Introduction

One of the most significant and urgent educational policies after the establishment of the Korean government were implementation of compulsory elementary education as stipulated in the Constitution and Education Act. This one single policy measure is considered to be the major contributor to miraculous economic growth of South Korea. After the World War – II India and Korea started at same level, however today Korea has a per capita income of 22000 USD where as India remains at 1300 USD. India realized the importance of compulsory elementary education late and started its mission of universalisation of elementary education in 2002 under the aegis of Sarva Siksha Abhiyan. As a late starter we have a lot to catch up and a lot to learn from South Korea. This paper discusses as to what could be the learning lessons with regard to qualitative improvement in SSA from the Korean Compulsory Elementary Education system.

Korean Compulsory Elementary Education System

In the subsequent paragraphs legal framework, policy outline, achievements and impact of Korean compulsory elementary education are discussed.

Legal framework

The Korean Constitution was enacted and promulgated on July 17, 1948. Article 16 of the Constitution stipulates that every citizen has an equal right to receive education according to his or her own capacity and elementary education is compulsory for all children. The Korean government enacted the Education Act on December 31, 1949 which consists of 10 chapters, 177 articles and additional clauses. However, establishment of the education system was postponed due to the Korean War, and the enforcement decree of the Education Law was finally declared in April 1952. Thereafter over a

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period of time other supplementary laws were enacted to strengthen the Korean education system. They were relating to securing finances for education, setting standards for education, legalizing teacher training and employment, enactment of national curriculum.

Policy outline

The Education Act broadly laid down the Korean Education policy. They are:

- Provide 6 years of free and compulsory elementary education
- Achieve 100% enrollment of elementary school going children
- Centralized and standardized curriculum across the country
- Adopt US model of 6-3-3-4 ladder of education system
- Secure funds to build education infrastructure to cater to the increasing demand of the population
- Distribution of government published textbook
- Provide for adequate number of good quality teachers through institutional and incentive based intervention.
- Promote "one skill per one person" education.

Achievements

- **Enrollment:** The 6-year Compulsory Education Improvement Plan, which was implemented in 1954, was targeted to increase the enrollment rate of all school-age children to 96%, to build more classrooms and to secure educational finance necessary in implementing this plan by 1959. As a result of these efforts, the number of students enrolled exceeded the expected goal. The number of student enrollment significantly increased from 2,678,978 in the first year of the plan to 3,558,142 in 1959, outperforming a 0.4% increase from the previous goal of 96%.
- **School buildings and Classrooms:** Building school facilities and classrooms failed to meet the goal. The lack of financial resources essential for facility expansion was the reason for poor performance results. To overcome the problem, schools were run in double and in some places in triple shifts with overcrowded classrooms, but children were not denied their right to free elementary education.
- To secure financial resources for education, Korean government enacted the Education Tax Act on August 28, 1958 and the Compulsory Education Subsidy Act was established on December 29, 1958. With

provisioning of adequate finances the expansion and modernization of school facilities happened which are indicators of quantitative as well as qualitative development because the quality of physical environment of schools is directly related to educational quality.

- **Teacher's Training and Recruitment:** Since only 42% of elementary school teachers had teaching licenses at the end of 1952, the government was in urgent need to establish a standard for education personnel and strengthen measures on teachers' supply, training, and treatment. In April, 1953, the Public Educational Officials Act was enacted and promulgated to set standards on teacher qualifications, employment, pay, training and term, status guarantee, and discipline. Although there had been 18 teacher training schools for elementary education nationwide by 1950, the government had to establish temporary teacher training institutes to meet the rising demand for teachers. All graduates of education colleges were automatically hired as elementary school teachers after graduation. The government made efforts to provide teachers with better treatment by doubling teachers' salary and offering health allowance in 1957. Korean government continuously made efforts to provide adequate number of highly trained teachers which improved the quality of elementary education system.
- **National curriculum and government published textbook:** Other factors to facilitate the universalization of elementary education were the national curriculum system and the government-published textbook system. The central government established and unified the curriculum and compiled, manufactured, and distributed textbooks to students.

Impact

Korea's investment in compulsory elementary education after the war despite financial crisis paid great dividend in terms creating educated and disciplined population which helped it grow as a vibrant nation. Compulsory elementary education contributed to the development of human development index of Korea and formed the bedrock of its social development. The policy of compulsory elementary education is the biggest contributor to Korea's rapid economic development in such a short span of time inspite of poor natural resource base that Korea has. This is not difficult to understand as compulsory elementary education created a large

disciplined and skilled workforce which made a difference to labour output in the labour intensive industrial development of Korea.

Sarva Siksha Abhiyan

Sarva Siksha Abhiyan was launched by government of India in 2002 after a late realization that it has no option but to invest in compulsory and free elementary education if it has to bring about much desired social development along with enhancement in its human development index. In this section SSA's mission, achievements and challenges are discussed.

Mission Statement: "Sarva Siksha Abhiyan (SSA) is Government of India's flagship programme for achievement of Universalization of Elementary Education (UEE) in a time bound manner, as mandated by 86th amendment to the Constitution of India making free and compulsory education to the Children of 6-14 years age group, a Fundamental Right. The programme seeks to open new schools in those habitations which do not have schooling facilities and strengthen existing school infrastructure through provision of additional class rooms, toilets, drinking water, maintenance grant and school improvement grants. Existing schools with inadequate teacher strength are provided with additional teachers, while the capacity of existing teachers is being strengthened by extensive training, grants for developing teaching-learning materials."

Achievements and Challenges: One of the biggest achievements of SSA has been to bring about universal access in elementary education. At the primary level, 94 percent of the country's rural population has schooling facilities within one kilometer and at the upper primary level it is 84 percent. However, large number of challenges remains. They are:

- High teacher absenteeism
- Large number of teacher vacancies
- Poor quality of teachers who are insufficiently trained resulting in poor learning achievements of students.
- Poor quality of school infrastructure resulting in unattractive and drab physical environment for learning.
- High dropout rate especially among girl child.

Lessons from Korean education system for qualitative improvement in SSA.

- **Resolving the quantitative and qualitative shortage of teaching human resource**

Today SSA is facing a chronic shortage of quality teaching staff. Though, SSA has brought certain innovation in dealing with shortage of teachers by making provision for para teachers who are selected and appointed by local village education committees from among the suitably qualified local youth on an honorarium basis. Still in remote areas it's difficult to find a local candidate with basic minimum qualification and such posts remain vacant. Even though large number of additional teacher's requirement has been taken care of by this process, their teaching skills and abilities leave much to be desired. Most of them are untrained. Though there is provision for their training at local BRC, but the nature of training is insufficient and perfunctory which hardly makes any value addition. Taking a cue from the Korean experience, temporary teacher training colleges need to be established at regional/district level where such para teachers could be given at least one year residential training courses. There is an urgent need to take necessary legal and policy measures in this regard. PPP model in this context can be tried out to get started quickly and bring in the latest teacher training practices. Also special courses need to be formulated in such colleges to prepare well trained para teachers from under qualified candidates of remote areas where we are not able to fill such vacant posts.

- On the other hand we are faced with large vacancy of regular teachers as against their sanctioned posts. Necessary legal and policy measures need to be taken to set up a separate university for teacher training at state level and open adequate number of affiliated teacher training colleges, as Korean government had done long back. A separate and dedicated university will ensure that latest curriculum is in place for teacher training and examinations are conducted on time. The seats in such colleges should be calibrated to the demand of number of teachers. Entry to such colleges should be based on examinations; however they should be automatically appointed after they have passed out of such college. This will attract the best talent to the teaching field and ensure a consistent supply of quality trained teachers which will go a long way in bringing qualitative improvement in the education system.
- **Upgrading the physical environment of learning**

  During our visit to Korean government school we found that their school building, classrooms and campus was attractively designed and each

class had variety of illustrative learning aids for the students. Physical environment was very child friendly and it certainly contributed to attracting students to school. In this regard SSA needs to introspect. Though we have been able to achieve the target of school buildings, the design of our school buildings, classrooms and campus are not creative enough to attract children to school. They are drab and child unfriendly. Retention of students to school is not only a function of MDM but also of attractive physical environment and good quality teachers. We should learn from the Korean example and the next stage for SSA should be to invest in upgradation of school facilities so as to make it an attractive place of learning. This will certainly bring about qualitative change in our education setup.

Conclusion

The other challenge is of teacher absenteeism. This requires three fold measures. As far as possible provision should be made for appointment should be made from local well qualified and trained youths. Appointment of para teachers is one step in this direction. Secondly, technological tools as well as PRI representatives must be deployed to sharpen the monitoring of teacher's attendance. Thirdly, measures have to be taken to reduce the non-academic load of teachers. In this regard Korean teachers are better placed and it remains one big challenge for our government as no other department can match the numbers of education department to share/reduce the non-academic load on our teachers.

If the abovementioned suggestions are taken to its logical conclusion, it will go a long way in reducing the dropout rate and improve the quality of education. Koreans have taken a giant lead in this direction as they had initiated this programme around 50 years ahead of us, but we can learn from their example and catch up fast. Our present median age of population is 24 and if we have to reap the demographic dividend we must catch up fast. There is a hope that the coming 12th year plan will take care of the issues mentioned above, especially with the talk of upcoming National Teachers Mission, things look bright for the education scene in India.

Public Service System In Korea And India: A Comparative Analysis

Shruti Singh*

Introduction

The story of South Korea is one of passion. Passion in the people and their government to achieve excellence. The brief visit that we had to Korea was an eye opener for our entire group. A small country ripped by international politics and economic backwardness, blossomed into a developed nation with a high GDP and growth rate in a short span of fifty years. The 1940's and 50's saw nationalistic movements in many Asian countries which ultimately led to their independence from long colonial rules. However, the path that every country took from there on was different. South Korea was a country that received aid from the US for a long time owing to its geo-political importance. With its passion for self-development and competitive zeal, South Korea soon took over its own reigns and led its people into a secure, progressive and fast developing nation, not to miss its conversion from an aid receiving to an aid donating country in the world economy. What caught my attention the most was the efficacy and determination of the government of South Korea that was able to deliver what similar legislative and executive setups failed to, in other Asian countries. For this reason, I chose to dwell upon the intricacies of the public service system in South Korea and compare it to the system prevalent in India. This paper attempts to put into focus, firstly, the salient features of public services in Korea and India, and then goes on to draw parallels/differences between the two. Finally the paper would discuss the possibilities of implementing some good practices of the Korean system to the Indian context.

Right at the outset it would be apt to mention that one feature that stands out in the working of the Korean government is the bottoms up approach. The government has always focused on strengthening the base first and that's the reason why the structure built on top is so powerful. High focus on the education sector led to almost 100% literacy rates. It is no secret that only a

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literate society can be empowered enough to recognize its rights and responsibilities. In a similar way, the government has built up a strong public service system so that the efficiency in delivery of services to the public is exemplary. Good performers are rewarded, strong work ethics are inculcated, proper and timely training is imparted to all concerned. Human Resources (HR) is emphasized upon not only in the public sector, but also the private. Let us first briefly identify the structural organization of the Korean public service system and then go on to outline its main features.

South Korea has three main branches of the government- the legislative (national assembly), the executive and the judicial (the courts). In a unicameral system, the national assembly or the parliament has 300 members for a four year term. The executive branch of the government is headed by the president who is the head of the nation and the commander-in-chief of the armed forces. He has a single five year term and cannot be re-elected (perhaps to avoid any chances of military reign in the country). The president is the chairperson of the state council or the cabinet which is constituted of the vice-chairperson (Prime Minister) and 15-30 members.

An interesting feature of the executive branch is the number of ministries and administrations that form a part of it. The main ministries include – strategy and finance, education, science and technology, health and welfare among others. Administrations are also of various kinds like the national tax service, Korea customs service, cultural heritage administration and so on. Both the ministries and the administrations operate their regional offices directly. Further the government is divided into two levels- that of the central and local government. The central government has officials appointed by the president while those in the local government are appointed by the head of the local government. The remuneration system is same for both the central and local public officials.

MOPAS or the central personnel management system is responsible for overall co-ordination and management of the national administration, human resources, e-government; local autonomy and regional development; public safety, national disaster and emergency management. In 2008, four ministries were amalgamated to form the MOPAS– the MOGAHA (Ministry of Government Administration and Home Affairs), the CSC (Civil Service Commission), the NEPC (National Emergency Planning Commission) and the MIC (Ministry of Information and Communication). As a result of

bringing all these ministries under one roof, the management of the entire public service system became easier, efficient and uniform, leading to better administration as a whole.

Features of the Korean public service system

Some features of the public service system in Korea are outlined here. The entire civil service is ranked into nine grades based on their relative importance, power and hierarchy. The recruitment principles are based on equal opportunities for all as per their abilities, qualifications and results. Some recruitments are done on the basis of open competitive exams (e.g. For grade 5, 7 and 9) while some on the basis of limited competition/non-competition like positions involving special knowledge and skills. There is a fixed eligibility of applicants as well a pattern for the entrance exams. The promotion policy in the public service system is also very clearly defined. For instance, promotion to grade 4 or lower is based on performance evaluations, seniority and yearly individual learning hours. Promotion to still higher grades may require examination or screening by some committee. In any case, an official is aware of the requirements for promotion which makes it easier for him/her to achieve it. The pay structure of the services is also very clearly defined. The base pay is fixed according to the pay schedule and the service years, while 26 different kinds of allowances are paid according to the working, living conditions. Actual expenses are also paid as per the meal, job position support, traditional holidays and compensation on unused leaves to the employees. The ratio of the salaries of public officials to that of the private sector employees is 85.2%.

Another interesting feature of the public service system in Korea is the performance based bonus program. The bonuses are calculated by multiplying the standard basic salary by the performance bonus rate which is again fixed in a very scientific manner. The working conditions are very employee friendly and there is also a very practical leave system. The retirement age for public officials is 60 years. There is provision for honorary retirement which is allowed for those who have worked more than 20 years and voluntarily retire more than one year prior to their retirement age.

The pension system covers all the public officials in the central and local governments, including judges, policemen, postal service workers, and public school teachers. The contributions made by the officials themselves

are 7% and a matching amount of 7% is contributed by the government. The conduct of public officials is governed by the Public Service Ethics Act that involves registration and disclosure of property, sale or trust of stocks, report on gifts, restriction on employment of retired officials and so on.

Training to public officials is an integral part of the service system. All the public officials are encouraged to take specialized training programs to increase their knowledge and skills to carry out their functions effectively in their respective fields. Also training is considered to be a joint responsibility of the officer and his/her superior. Further, performance evaluation is done to ensure the accountability, efficiency and effectiveness of the administration. Two types of evaluations that are prevalent are: a). self-evaluation- by the central ministries or local governments to evaluate their own policies (major, financial as well as those related to organizational capacity) and b). Specific evaluation- done by the PM office ort the GPE (Government Performance Evaluation) Committee, to evaluate regulatory reform, customer satisfaction and specific government policies. The GPE mentioned above is supervised by the policy analysis and evaluation office (under the PM office) which establishes basic plans and execution plans for government performance evaluation.

Comparison with the Indian system

Let us now attempt to discuss the salient features of the public service system in the Indian context under broadly the same sub-heads. While we do this, we will also highlight the similarities/differences if any, between the two systems.

First is the issue of recruitment. In India too, selection for the All India services and a number of other services is undertaken by the Union Public Service Commission at the central level. States too have their own state public service commissions, however, some states hand over the responsibility of the selection process to the UPSC, after the due consent of the latter. Here it would be apt to point out that the UPSC has earned its credibility over years of fair selection and examination processes, the same cannot be said for the State public service commissions. State commissions are often marred by political controversies over the appointment of members or irregularity in the conduct of examinations or sometimes even foul play in the disclosure of results. Like in Korea, it would a step forward if

our selection/recruitment process is streamlined properly with no scope of subjectivity for any selecting agency, both at the central and local levels.

It is no secret that the biggest incentive for any employee, public or private, is promotion. It not only leads to salary enhancement but also gives boost to a person's social status. This is one area where the Indian public service system needs to strengthen itself. As may be recalled, in the Korean system, right at the entry level, the public official has an idea about the length of service, kind of performance he has to put in for promotion. This objectivity increases the morale of the employees. In India, it is high time that interference, favoritism and recommendations be ruled out completely in promotion cases. Also the DPC or Departmental promotion committees should sit regularly so that no employee is devoid of a rightful opportunity of promotion. Out of turn promotions lead to a lot of bad blood which further effects the efficiency of other employees and the organization as a whole.

The pay structure in India is laid out in great detail. In Korea, however, the one feature that stands out in the pay structure, is the performance based salary system. A person who works better is paid better. This kind of incentive, undoubtedly, gives a boost to sincere workers, and makes them achieve goals to the best of their capabilities. In India too, a performance based salary system would definitely go a long way in increasing the efficiency in the working of employees and thereby, the organization as a whole. Further, the fact that the salary of a public official in Korea, as mentioned before, is around 85% of that of an employee in the private sector, at the same level. The pay commission in India needs to further attempt to bring up the salary of public officials to a more realistic level keeping in mind the general inflation and standards of living. An attractive salary package, coupled with incentives based on performance, would help reduce corruption in the Indian public service and also attract well educated/qualified people to join the government sector.

Leave and retirement/pension schemes are, by and far, quite progressive in the Indian public sector. With the recent introduction of the contributory pension scheme, an employee contributes a part of his salary as pension after retirement and the government too contributes a matching amount to this.

Training is an important ingredient in the career of any public/private employee. In India, the general attitude of superiors towards training is not

very welcoming and there is certain reluctance in them to relieve their subordinates for training purposes. Employees too, generally take up training courses for "vacation" purposes. A mindset change needs to be brought in order to disseminate the importance of training to one and all. Like in Korea, training needs to be made compulsory at fixed intervals in everybody's career. Further, the training institutes too need to be upgraded and equipped to be able to impart relevant training to the public employees. In the same vein, evaluation procedures need to be chalked out clearly. Impartial, timely and scientific evaluation helps in boosting the motivation levels of employees. A good HR policy that involves proper interaction between an employee and his/her superior, counseling required as per need, healthy working conditions would go a long way in building strong organizations with immensely motivated and efficient employees.

Conclusion

To sum up, learnings from the comparison between the Korean and the Indian public service system are many. There are some features of the Korean system, which if inculcated in our system, would surely enhance the strength of our own public services. A performance based salary enhancement system, a fair and regular system of recruitment as well as evaluation, a more realistic pay structure, proper training and HR policies – all these are just some suggestive reforms that can be taken up in India too. One can hope that in the near future our public service system will emerge as strong as our democracy.

Salient Features Of Public Finance Management In South Korea

Arun Roy V*

India and South Korea[1] were almost similarly placed countries in the mid-twentieth century. However, post 1960s, Korea made large strides in economic progress and has attained the status of a developed country. A basket of enlightened policies pursued by the Korean leadership was responsible for this transition. Today, Korea is a model for the entire world, including India. An effective system of managing public finances is vital for the economic development of any country. In this paper, I am proposing to list a few salient features of the public finance management in Korea, and also to study whether they can be replicated in India. Public Finance Management is a vast area and hence the entire gamut of it cannot be covered in this paper. Hence, I have been selective and notably, this paper does not deal with two important aspects of public finances, i.e. current account surplus and taxation, as they are vast topics in their own right. The focus of this paper is on fiscal prudence and the budgeting aspect of public finance management.

Fiscal Balance- The main pillar of fiscal prudence and sound fiscal management of any nation is the maintenance of a controlled fiscal balance ie the difference of expenditure over revenue. Historically, Korea has an excellent record in this regard and has never allowed its fiscal deficit to enter dangerous level since early 1980s[2]. In fact, Korea is one of the few countries in the world which occasionally manages to even have a fiscal surplus. If the fiscal balance of Korea in the 1988-2010 period is studied, it can be seen that,

[1] Hereinafter referred as Korea in this paper

[2] Youngsun Koh, Reforming the Fiscal Management System in Korea, http://www.nber.org/chapters/c0897

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following the restoration of democracy in 1988, the Korean Government had has never allowed its budget deficit to cross 4% of its GDP except in two years. Moreover, its performance in this respect has been considerably better than the OECD average and G-7 countries' average except during the period of the Asian financial crisis.[3] Historically, from 1988 until 2011, South Korea Government Budget averaged -0.0800 Percent of GDP reaching an all time high of -3.4700 Percent of GDP in December of 2007 and a record low of -4.1000 Percent of GDP in December of 2009[4]. Even now, in spite of the global slowdown in economic growth, Korea is maintaining a tight control over its deficit and has reported a Government Budget deficit equal to 2.00 percent of GDP in 2011. A study of the 2012 budget of Korea indicate that the Government is proposing to eliminate the deficit by 2013.[5]

The maintenance of a low deficit has two important implications. Firstly, it keeps the national debt and consequently non-productive expenditure on interest payment at minimum. Secondly, it enables a nation sufficient leg room to expand spending and pursue countercyclical fiscal policies whenever there is an economic crisis and Korea has done exactly that during the Asian crisis of late 1990s and the global financial crisis of late 2000s. Korea could emerge out of the Asian financial crisis relatively unscathed due to the fiscal comfort it already had which helped it to greatly support its financial institutions and it was during this period that the budget deficit crossed the 4% mark for the first time since 1988.[6]

While the importance given by Korea to fiscal balance is a lesson for India to learn, it is debatable whether the extend of fiscal conservatism shown by Korea is worth emulation by India. In my opinion, the same is neither possible nor desirable for India. Not desirable because India is at a certain stage where considerable public expenditure is called for to boost the economy and infrastructure. Any kind of indiscriminate expenditure control at this stage will have a debilitating effect as the toll will be mostly taken by the infrastructure sector because the other items of major expenditure like defence, interest payment and subsidies are largely non-negotiable in the

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[3] Jongseok An, Public Finance and Tax in Korea, www.koafec.org
[4] Budget 2012, http://english.mosf.go.kr
[5] Ibid
[6] Supra n.2

present political context. Moreover, it is noteworthy that even Korea had a high fiscal deficit in the 1970s when it was investing heavily in its infrastructure. I also think it is not possible for India to reduce its fiscal deficit to the Korean level mainly because Korea, unlike India, has always believed in a lean and mean State. Korea has never assumed the role of a welfare state to the extend other developed countries have assumed, except in health care where also the insurance coverage extracts a substantial contribution from the beneficiaries. Korea's public expenditure as a percentage of GDP has been just 25% in 2000 as against the OECD average of 40% and over 50% in the case of Scandinavian countries. The difference is even more stark when social expenditure alone is considered. Of late, there has been considerable discussion whether such fiscal conservatism is sustainable in view of a rapidly aging population which would demand higher welfare expenditure as well as the rising unemployment rate among youth calling for active state involvement in creation of jobs, a theme which is one of the focus areas of the budget of 2012. The other reason which has enabled the Korean fiscal performance is the low share of agriculture and the low number of people dependent on agriculture in the nation. It is the experience worldwide that farmers command and require huge subsidies. On the other hand , welfare schemes and subsidies occupy a large space in the Indian political economy's landscape. While these schemes can be integrated, streamlined, trimmed or fine tuned, it is not possible for the Indian Government to conceive of a substantial cut in welfare spending. The problem is augmented by the heavy dependence on agriculture which corner a huge subsidy budget in the form of power subsidy and fertilizer subsidy.

National Debt- Korea is one of the least indebted developed countries of the world. Its public debt as a percentage of its GDP was only 24% in 2010. It should be noted that this indicator in the same year for Japan, UK, USA and India are 226%, 77%,59% and 56% respectively.[7] The country emerged from an aid receiver to become an aid donor. A low level of national debt is important as it reduces unproductive interest payment expenditure and thus frees up resources for productive expenditure. Korea has been able to

[7] http://www.economicshelp.org/blog/774/economics/list-of-national-debt-by-country

achieve this low debt level due to tight expenditure control, unusually low level of subsidies and a comfortable current account balance as a result of its active export promotion policies from 1960s onwards.

Medium Term Expenditure Framework (MTEF)- Till mid 2000s, Korea, as was the case with many other countries, did budgeting focusing merely on the single coming year. Though fiscally sound, this created a problem in long term planning especially when counter cyclical policies had to be pursued in recession times. Thus Korea enacted its fiscal responsibility legislation in 2007, creating a legal and institutional framework for MTEF. The concept of a National Fiscal Management Plan (NFMP) was introduced. NFMP, an integral part of budgeting now, is a rolling plan with a five year time horizon.[8] In this context, it may be noted that India also follows this approach though the time horizon of Medium Term Fiscal plan in India is only three years. In fact, Korea's five year NFMP is longer is time duration than most countries. As is the case in India, NFMP is revised annually with due regard to economic needs. NFMP also covers the entire gamut of central finances covering both general and special accounts. The NFMP also provides a clear strategy for achieving these macroeconomic goals. For example, the strategy for achieving fiscal balance by 2013, as seen in the present NFMP, is to keep the growth rate in expenditure two to three percentage points below the growth rate in revenue. The NFMP also prescribes sectoral expenditure ceilings. In India also these features are seen. However, unlike in Korea, the problem with Indian MTFP is that the targets are often unrealistic and it is repeatedly seen that the targets are grossly underachieved.

Departmental Participation in Budgeting- In India, the budgeting is done in a highly centralized manner by the Finance Ministry which gets into head-wise allocations of each programme or scheme. Korea also used to follow this process till mid 2000s. But now, considerable autonomy is given to line ministries. The cabinet, headed by the President, sets ceilings on total expenditure and sectoral ceilings. Once these ceilings are communicated to the ministries, the line ministries do the inter-se allocations within various items of expenditure subject to the broad guidelines issued by Finance ministry for common items of expenditure. This process has two main

[8]Yang-Hyun Jin, Korea's Experience with Medium-Term Expenditure Frameworks, http://blog-pfm.imf.org

advantages. First, it enables the Finance Ministry to focus on macro-economic issues and second, it automatically leads to more fiscal accountability and ownership by line ministries.

Accuracy of Budgeting- As stated earlier, in India, we often see that the budget targets are overshot in expenditure and underachieved in revenue leading to higher than projected deficits. Moreover, submission of supplementary demands for grants happen every year and has become a matter of routine. In Korea, supplementary expenditure demands have occurred rarely, except during the times of global or Asian economic crisis.[9] There is an appreciable degree of budgeting accuracy in that country when it comes to projection of deficits or surpluses. Korea follows a very conservative budgeting policy, always over-projecting expenditure and under-projecting revenues, thus leaving enough room for fiscal shocks.

Transparency in Financial Documents- With a view to introducing more transparency in the financial reporting and accounting, Korea has introduced accrual based accounting from 2009. Thus, all future cash flows arising out of present actions are also reflected in the accounts giving an accurate picture of the financial position. They have also completed an on the on the spot inspection of all national property in 2009 so as to prepare a more accurate asset liability statement.[10] In India, though the 12th Finance Commission had recommended the introduction of accrual based accounting for better fiscal transparency, very little headway has been made in this regard. Had there been accrual based accounting, off budget liabilities like oil bonds, fertilizer bonds, etc could not have escaped being accounted in the respective years of their issuance. But it must be recognized that shifting from cash accounting to accrual based accounting is no mean task and Korea also took a decade for this switch over.

Use of IT in Financial Management- Korea has a very impressive Digital Budget and Accounting System, DBAS, for performing all financial processes online and connects financial systems of various government agencies and public entities. Launched in 2004, this system, also called *dbrain* covers budget making, real-time processing and analysis of cashflows, cost

[9] An indication of the Korean aversion to supplementary budget can be seen from the newspaper report of the Korea Times, dt 8-8-2012, titled "Last Resort", http:// www.koreatimes.co.kr/ www/ news/ opinon/2012/08/137_116969.html

[10] http://www.capa.com.my/images/capa/IPSFMconf_KeynoteAddress_JaeseekPark.pdf

management, debt management, asset management and also facilitates real-time accounting. This fully integrated finance management system is worth emulation in India both for the ease of transaction for citizens (mostly tax payers), government officials and policy planners. In India, significant steps have been taken in this regard like e-payment of taxes, electronic submission of bills and e-lekha programme of Controller General of Accounts which allow real time monitoring of revenues and expenditures. However, a fully integrated financial management system is miles away.

To summarise, Korea has an outstanding public finance management framework which would be the envy of even other developed countries. While its policy of fiscal prudence through fiscal conservatism may not be replicable in India due to our economy's need for increased public spending, the other salient features discussed above can be and must be introduced so as to make our public finance management more scientific, responsive and capable to steer our country towards over all economic development.

South Korea's Economic Development Experience

Swati Sharma*

Introduction

South Korea's economic development experience over the past half century has been unique. "According to the World Bank's statistics, Korea's per capita GNP was a mere US $89 in 1961, which ranked Korea at 101 out of 125 member countries. At that time, Korea was amongst the poorest countries in the world. However, by 1979, at the end of President Park Chung Hee's 18 year rule, Korea's per capita GNP had reached US $1,510, ranking it 49 out of 125 countries".[1] (Fig 1) This figure has subsequently reached US $20,000 by 2010. South Korea's remarkable development was referred to as 'A miracle on the Han River'.

After the Korean War (1950-53), the strong and vibrant government leadership of South Korea (hereinafter referred to as Korea) emphasized on economic development strategies to become an industrialized economy from a poor agricultural society. For economic development, the Government and the private sector joined hands, ably led by a performance driven leadership which laid stress on innovations, competitiveness, merit based selections, infrastructure development, export oriented industrialization, rural development, human resource development, financial and macroeconomic reforms and feedback from stakeholders.

The developmental strategies strengthened by incentive systems to step up investments by way of Foreign Direct Investments (FDIs) / Foreign loans in various fields enabled Korea to recover quickly from the economic crisis of 1997-1998. Thus, Korea's developmental path exhibited State's effective intervention in the economy to check market failure. (Fig 2)

This paper presents a brief insight into Korea's economic development

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strategies that led it to join the ranks of industrial democracies, becoming a member of the Organization for Economic Co-operation and Development (OECD) in 1996 and assesses if we can extract lessons from Korea's economic transformation to promote rapid and broad based economic development in India.

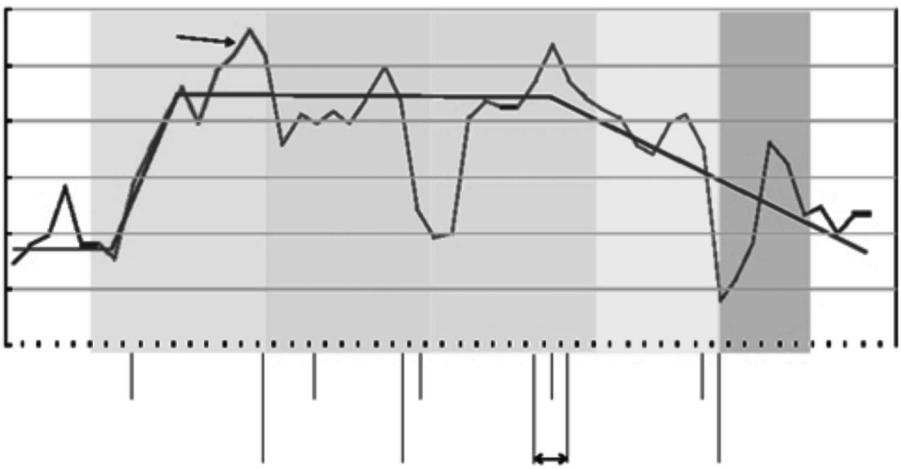
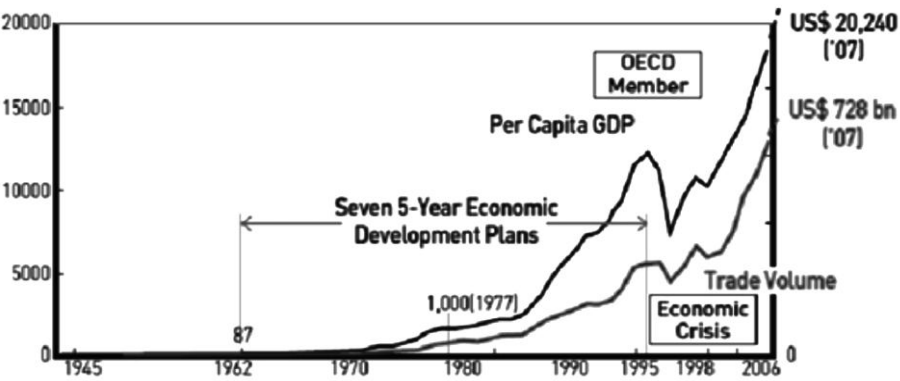


Fig 1: Korea's developmental experience[2]



Note: Korea's trade volume (right axis) and per capita GDP (left axis) are both given in current U.S. dollars.

Fig 2: Korea's journey from Poverty to Prosperity (Kim Chung-yum, 2011)

Economic Measures and Strategies

The Korean military leadership undertook a series of policy initiatives to strengthen the economic institutions. "South Korea's *chaebols* played (and

continue to play) a key role in national economic development, in concert with the State, which - through its five year development plans - sets national economic targets".[3] The government's emphasis on knowledge based economy with focus on rules rather than discretion led to a constructive growth in all sectors. Following strategies allowed Korea to make considerable progress on all fronts:

International Trade Promotion (Export Oriented)

A high priority was placed by the Park Chung-Hee regime on rapid economic growth. Since 1960s, Korea exploited its comparative advantage in textiles, raw silk, iron ore, rice etc. by adopting an intense export promotion strategy suited to its economy due to its natural resource constraint, cheap labour, low savings rate and a small domestic market. "To provide institutional support in the area of foreign marketing and technology imports, the government established the Korea Trade Promotion Corporation (KOTRA) in 1962 while an elaborate network of exporters' associations provided more industry specific services". *(Kim Chung-yum, 2011).* Firms were strictly chosen in a performance oriented discriminatory manner.

During 1970s, the focus shifted to high value capital intensive goods from labour intensive goods. "The basket of goods under this category were iron and steel, electronics, ship building, chemical and allied products and non-ferrous metals".[4]

In 1980s, Research and Development (R&D) was stressed by increasing R&D spending. "Korea's gross R&D expenditure increased from less than 0.5% of GDP in the early 1970s to approximately 3% of GDP in the mid-2000. Over the same period, the private sector share of R&D spending increased from 20% to 75%". *(Kim Chung-yum, 2011)*

In 1990s, Capital goods industry received government's attention and the 21st century Korean economy has been completely dominated by export oriented industries viz. ship building, semi- conductors, automobiles, electronic parts, automobile parts, computers etc.

Since then, Free Trade Zones have also been established for support. Thus, stable institutional mechanisms added value to existing governance structures and industries. (Fig. 3, 4 & 5)

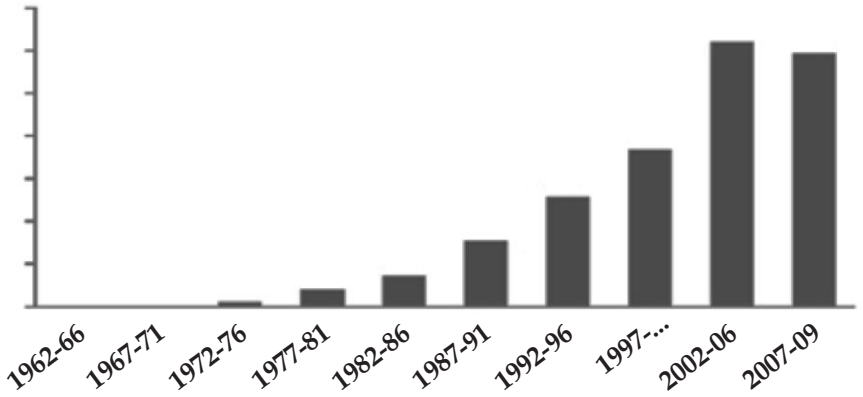


Fig 3: Exports in Korea[5]

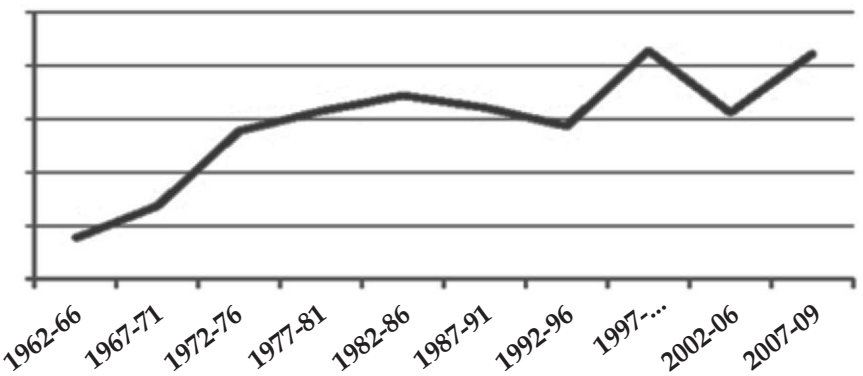


Fig 4: Exports (% of GDP) in Korea[6]

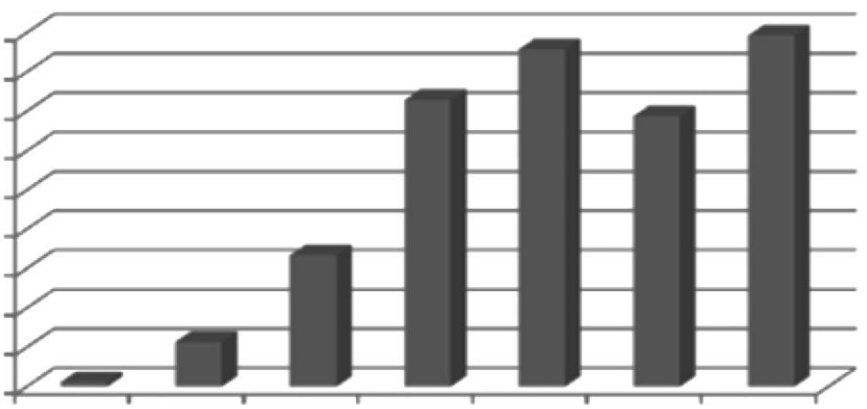


Fig 5: Trade Volume (US $ billions)[7]

Infrastructure Development

For infrastructure development, prudent allocation of scarce resources was undertaken to broaden and strengthen Korea's core sectors. "Korea invested in power, transport, communications and water infrastructure to facilitate economic growth and human development".[8]

Korea embraced power sector reforms that changed the ownership, planning and management of the electricity sector. In December, 2000, two laws were enacted to break the national electricity monopoly so as to bring about privatization.

To promote export led economic growth, the Government made concerted efforts to modernize its ports, expressways and water infrastructure. "In the wake of the Asian financial crisis of 1996-97 and following an earlier initiative that had yielded limited results, the Republic of Korea revised legislation governing private participation in the management and financing of infrastructure. Procedures for bid awards were made more transparent, and tax incentives and generous revenue guarantees were introduced. In 1998 a port container terminal was offered for the first time for foreign investment".[9]

Financial and Macroeconomic Measures

In 1961, the Economic Planning Board (EPB) was set up to formulate Five Year Economic Development Plans to coordinate policy. The focus then was on labour intensive industries to promote export led growth.

The realization that regulatory weaknesses in the financial sector led to the financial crisis of 1997-1998 forced the Government to go ahead with banking sector reforms and market liberalization. .

The ever growing influence of *Chaebols* which swayed major business decisions and market failures led successive governments to enhance financial transparency measures to ensure that undeserving firms do not get the same preferential treatment as before. Fair competition was emphasized to take care of conflicts of interest. Structural reforms like Foreign Bank ownership, promoted under the Kim Dae-Jung administration (1998-2003) and the Roh Moo-hyun administration (2003-2008) were State-led bold steps to achieve macro-economic stability.

Banks were nationalized to exert direct control over them and massive amounts of money were injected into the banking system. "*Chaebols* were

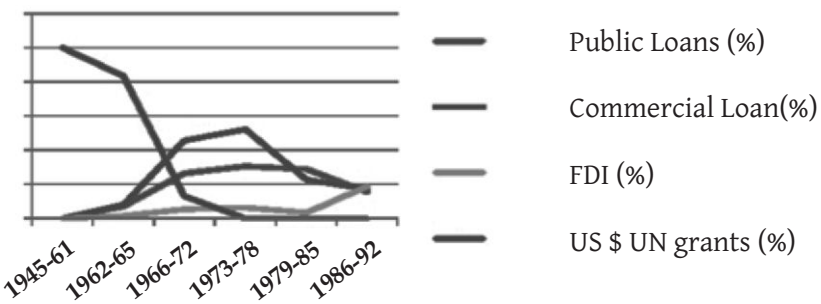
excluded from ownership of banks by the Korean Banking Act, which prohibited non-financial corporations from owning more than 4 % of the voting shares of commercial banks".[10] Later, "Nationalized banks were successfully privatized after they had been made profitable by the government through massive refinancing, restructuring and downsizing".[11] Deregulation drives were conducted to limit growing powers of the *Chaebols*. The Regulatory Reform Committee undertook the '50%'reduction of registered regulations' done in 1998.

Information and Communication Technology (ICT) Advancement

"South Korea has adopted Information Technology faster than any other economy in Asia. More than one third of the population regularly uses the internet, a higher figure than for other high income economy such as Japan and average monthly usage is 18.1 hours, the **highest** in the world. South Korea boasts the **highest broadband penetration rate** in the world, double that of Canada, its closest rival. Internet access costs only one third as much as in Japan. In the stock market, nearly two thirds of all share transactions by value, and a third by number, are now conducted on-line, again, **the highest in the world**."[12]

Foreign Direct Investment Promotion

Since 1980s, enormous amount of FDI started to flow in the Korean industries. FDI has been an integral part of the Korean economy. Foreign Investment Promotion Act was passed in 1998 to protect investors' interests and to make Korea a business friendly country. This was made possible because of continuous interest and strong will of Korea's charismatic leaders. In 2010, FDI in Korea reached a 10 year high at US $12.88 billion - an increase of 12.1 % compared with US $11.48 billion in 2009. (Fig 6)



Human Resource Development

In 1950, Korea introduced Universal Primary Education and subsequently strengthened vocational training and Science and Engineering education. Korea's visionary leaders emphasized that productivity increased by increased competence. The National Human Development Plan supported general and vocational education resulting in high literacy. "Presently considerable resources are also directed at providing the best in western business education for the top echelons of managers in their largest companies".[14]

As per UNDP estimates, Korea registered an impressive improvement in its Human Development Index (HDI) from 0.722 in 1980 to 0.937 in 2007. This translates into an average annual growth rate of 0.97 percent.

Applicability in Indian Context

There are a few critical lessons from South Korea's economic development experience that can be drawn for undertaking economic reforms in India.

- The State's dominant role in economic development can-not be over-emphasized. To prevent market failure, for competitiveness as also to control excessive costs, greater State intervention as in Korea with private sector participation is required.
- Sectors, in which India has a comparative advantage, need to be leveraged and for increased export promotion, greater freedom to banks, export incentives to performers and provision of export finances can be done. Trade promotion strategies like setting up of FTZs to attract foreign investment can be tried in India too.
- India needs to focus more on power, telecom, roads, ports, railways and related infrastructure facilities as in Korea. Rakesh Mohan Committee Report too recommended reasons for Infrastructure Reforms (to revitalize the Indian Economy) which can be summarized as:
    - Fiscal Constraints
    - Public Sector inability to deliver efficiently
    - Efficient Infrastructure for attracting FDI
    - Global Funds availability for infrastructure financing
    - Technological advances
- Existing economic processes have to re-structured with more stress on

fiscal transparency and rules and procedures to impose financial discipline which would promote economic development. Fiscal improvements especially through tax and non tax revenues have to become a priority of the decision makers as in Korea.

- Due to technological advancements in the ICT sector, many new services can be made available in the telecom sector and new private entrepreneurs as in Korea can be encouraged.
- For encouraging investments from private entrepreneurs, capital has to be made available cheaply either domestically or through Foreign Direct Investments.
- The low levels of public awareness stress the need for persistent economic reforms all the more. Educational reforms need to be undertaken with the same vigour and zealous enthusiasm as in Korea.
- Since India is resource rich, agricultural growth too requires up-gradation of rural infrastructure like roads, power and effective storage / godown facilities etc. which will result in high economic returns.
- For a prosperous economy, resource mobilization is as much necessary as is prudent utilization of scarce resources.
- Accountability of officials as in South Korea's administrative structures with strict imposition of penalties on wrong doers has to be inbuilt to encourage better resource management.

Thus, it is inescapable that if India has to be amongst the foremost economically developed nations, the government has to initiate and promote developments and investments in various fields. It is high time that actual implementation efforts are focussed and consolidated.

Conclusion : The Way Forward

One can-not deny the strong influence of US political interests on South Korea's economic development. These have changed with time, making South Korea more competitive and aggressive in its domestic and international policies. Also, socio-environmental concerns can-not be ignored as was done under Korea's dictatorship era.

A closer look at Korea's economic development experience reveals strengths that enhance human capital in association with a vibrant private sector. It goes to show that regulatory economic principles must be technically sound and well reasoned through customer feedback. Economic policies have to be

changed to ensure lasting efficiency and increased productivity in the systems. The various regulatory agencies in India are still struggling with technical expertise issues and are reluctant to open up to private participants. What is required is strong political will to take unpalatable decisions in larger public interest.

What is of utmost importance is to understand that strong growth-oriented economic policy can be formulated inspite of various constraints imposed by a democratic polity. However, this should be done without undermining the basic principles of checks and balances in democratic systems.

Change can no longer be avoided.

References

A memoir by Kim Chung-yum: "From despair to hope" (KDI)

"What can be learned from Korean developmental experiences" by Prof. Sung hee-Jwa, Seoul National University at Seoul (Session,6th Mid Career Training Programme)

'Electricity reform at a crossroads: Problems in South Korea's power liberalization Strategy, Pacific Affairs, Sept 22, 2004

"The Role of Government in Development of Technology Intensive Products in Korea", Ahn and Mah

IMF: International Financial Statistics Year Book 2004; The bank of Korea Economic Statistics Year Book, 2010

Ibid;

Ministry of Knowledge Economy; www.mke.go.kr

"Global Leadership in Transition: Making the G-20 More Effective and Responsive", Colin I Bradford, Wonhyuk Lim:

Reforming Transport: Maximizing Synergy between Public and Private Sectors - Background paper for evaluation of World Bank assistance to the transport sector, 1995-2005

"Bank Nationalization, Restructuring and Reprivatization- The Case of Korea since the Asian Financial Crisis, 2010, H. Cho

Ibid;

"Economic Reform in South Korea: An unfinished Legacy", Marcus Noland

Ibid;

"Human Resources Development in South Korea", Glenn Miyataki, Art Whatley

Research, Industry, Business-Synergy: University Driven Industrial Cluster Development At Ansan (ERICA)

Dr P. Lakshmi Narasimham*

Policy, its Objective and impact in South Korea

Korea has large family controlled Business houses popularly known as "CHAEBOLS" from several decades which were established during the colonial rule under Japan or after Independence.

such as: Taechang (est 1916), Lucky (1931), Samsung (11938), Taechan (1946), Kekudong (1947), Kaepong (1949) Dengrip (1949), Sambo (1950), Koreaglass (1954), Tongyg (1956) etc., of which 6 chaebols are still existing; subsequently also family controlled companies have been established which have acquired the status of Chaebols such as Hyundai group, LG group etc. Due to the conscious decision of the South Korean government to promote industrial exports a s a growth engine to achieve quick economic development even the public sector units such as POSCO, Korea Gas have tasted success. (Ref.1)

Though the Chaebols have contributed in a large measure for Korean economic growth and infrastructure creation, minor problems were also faced due to the stupendous clout enjoyed by them such as: 1) Paucity of Human resources to SME's due to better prospects in Chaebols 2) non availability of freelance technical trouble shooters to cater to the needs of SME's 3) exploitation of SME's by mighty Chaebols 4) Lack of adequate capital to the SME's etc.

In fact, the problems faced by the SME's can be better appreciated by looking at the plight of 'Kuchon Soo', a 51 year old entrepreneur who committed suicide because of his failure to repay loan availed by him on time in 1992; sad part of the story is, he is a brilliant graduate from a prestigious university who could pass CPA examination with highest score in Korea and who positively reacted to the President's invitation for innovative research and

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developed 'a novel gas filled shock absorber' in 1990 which used to be imported till then and it has won the prestigious government award for his outstanding small business in 1992; he was running 'Korea gas industry co., and he availed US $ 6.3 million finance for development of technology and unable to repay the interest or principle on time and was harassed by his lenders driving him to commit suicide; at that time two more SME's owners have also ended their life in despair. (Ref.2)

The suicide note left behind by KU has become an emotive election issue in the 1992 and forced the government to initiate policy interventions to save the SME's from collapse. The most important among them are: 1) Chaebols were urged to support the SME's to strengthen their competencies in global markets by adequately extending financial and technical assistance 2) In 1994 itself 6 large companies transferred businesses including 1870 products to SME's. 3) Ratio of mandatory loans from commercial banks to SME's has been raised from 40% to 45% (70% for local banks and 35% for foreign banks 4) Government created various funds to stabilize technologically competent SME's that are experiencing temporary financial difficulties 5) Started business incubator system to help new ventures with potential; as of 1995 US $153 millions is made available for SME's. 6) Fair trade commission has been strictly imposing 6 day payment clearance law to relieve the SME's of financial burden. 7) University driven Industrial cluster at Ansan. (Ref.3)

Normally the small and medium enterprises are characterised by their weak economic and technological base, lack of : advanced technology/Heavy Machinery, capital, managerial capabilities; limited marketing avenues (mostly local) difficulty in securing the services of the qualified and competent personnel and virtually incapable of facing the stiff new global environment. Though the SME's are often considered as Back Bone of any Country's economy, special policy initiatives and measures may be necessary to protect them; more so in South Korea where the Chaebols are the Almighty. The Korean Government policy of export driven economic growth has actually resulted in an unbalanced dual economy with large conglomerates on one extreme and small/medium firms on the other. (Ref.3)

As of 1990 70% of the SME's (45056) were in buyer-supplier relationship with Chaebols. (ref. 4) The fact that due to unfair trade practices by large companies the SME's were exploited, in spte of repeated Government attempts to root them out (Ref. 5)

ERICA- initiative to help SME's

Over 30000 SME's have reportedly requested "HAN YANG UNIVERSITY" to establish Industrial University campus exclusively to cater to their various need over which the university responded positively and ERICA came into being. ERICA stands for Education, Research and Industry Cluster @ Ansan, which is the first innovative cluster campus in Korea. The University which has started as a small poly technical school in 1939 was converted as an engineering school in 1950 and became a full fledged University in 1959 with two campuses at Seoul and Ansan (this was started in 1979). In fact the Ansan campus was renamed as ERICA campus in 2009 during the 30th anniversary celebrations. The complex is in an extent of 1312815 Sq Mtrs having eight colleges, two special graduate schools with world class infrastructure comprising of: Erica center (5 floors), College of engineering building (6 floors), Koria Institute of Industrial Technology, Korea testing Laboratory, Korea Electro technological research Institute, Hanyang Business Incubator, Gyeonggi Techno Park, LG innotek R and D centre, Student Residential Hostel, Guest House, Design Department etc.; 1300 faculty, more than 10000 students and 50869 alumni (by Aug 2010). The ERICA has collaborative arrangements with 460 sister institutions and attracting large number of foreign students; it is also actively encouraging exchange programmes by sending their students to foreign countries.(Ref.6)

Initially the University received financial assistance from USA @ 7 million US $ per year from 1959 for considerable period; later the University is earning its annual budgetary requirements from fee collections (meets 60% of requirement of budget) and balance 40% from government and companies.

Usually for an Engineering student the fee per year ranges from US $ 4500/- to US $ 9000/- and similarly for other graduate or special courses also fee is levied and collected. Some of the SME's sponser students for undergoing courses on agreement of serving them for 2 or 3 years after the course.

In the campus selection and job Placements the successful candidates are reportedly getting remuneration in the range of US $ 25000 to US $ 75000 per year. It is great to learn that students research activities have resulted in grant of 54 Patents for the new technologies; there is sharing of benefits in 60%:40% ratio between ERICA and the Student. (Ref.6)

During the 1997-98 Asian Economic recession South Korea suffered certain setbacks resulting in several job's being laid off apart from mounting

American dollar dues. The government have taken a decision to establish techno park to connect to the SME's and it was established at ERICA in 1998. Apart from this, three more government research centers were established by 2003.The LG company has also established a research and development unit at ERICA campus in2006. The University has established a State of the art Advanced Robot Manipulation Research centre in 2009 and Ecology, Pharmacy Departments in 2010.

The important activities of ERICA in support of SME's can be summarized as here under:

- **(A) Development of New Technologies as required by SME′s:** Usually the small and medium size enterprises will not have capacity to engage scientists or organize research on their own in the field of their interest; which deprives them of the competitive edge and hence badly in need of newer technologies for their sustenance and growth with changing times; hence the ERICA is taking up research for developing new technologies and supply the same to SME's on a price/royalty basis through Korea Institute of Industrial Technology which is carrying out research in textile technology, robot technology; conduct collaborative research networks, exchange research experts transfer the technologies to SME's and even sharing of Lab equipment.
- **(B) KERI:** Korea Electro technology research Institute is involved in development of eco friendly electric systems, high speed train propulsion systems, R&D for biomedical appliances, testing and certifying domestic and overseas equipment etc.,
- **Testing and certification services:** Korea Testing Laboratory with the electromagnetic waves testing lab & a standard testing lab, a Dynamic testing lab and a General testing lab is offering testing and certification for the products generated by SME's before their introduction in to the market which comprises of Standard measurements, Lift (elevator) quality approval, environmental technologies, assessment of performance of energy facilities, electromagnetic wave - EMC/EMI testing etc .
- **Equipment support center-Heavy Machinery on Hire and Use:** The SME's being weak by nature are incapable of investing huge sums on purchase of Heavy Machinery even if they are essential for their activities; the ERICA is procuring Heavy Machinery on the request of

Units and after proper assessment of Machine use periods etc. and provide them in the campus for use by Needy SME's after collection of fixed user charges. As on date the center is having 31 machines procured with an investment of US $ 17 millions.

- **Maintenance of Heavy Machinery on PPP arrangement:** Usually any Institution can procure Heavy Machinery but their periodical maintenance becomes a problem; the ERICA has adopted a novel PPP approach for maintenance of 31 pieces of machinery-selected 7 SME's and entered into a PPP arrangement by handing over machinery to them for: giving on hire to any SME's as per their need, collection of hire charges, arranging periodical maintenance etc. services and offered the PPP partner to retain 60% of the revenue and pass on 40% of the revenue to the University. By this good initiative all the 31 pieces of Heavy Machinery are in good running condition .
- **Supply of Human resources to SME's:** The small units find it difficult to attract the technically trained competent personnel hence they convey their requests to ERICA which is organizing-campus selections or giving admission to students sponsored by SME's to enable them to join the SME which has sponsored after completion of course and serve for at least 2 or 3 years and reserve right to seek absorption or search greener pastures. Job placements may be on part time or full time basis
- **Contract education programme-Special courses for SME's persons:** The ERICA is designing special courses as per the requirement of the SME's depending up on their need and offering the same to either sponsored or open candidates.
- **Finishing Skills etc.,:** The staff serving the SME's may require some special skills or general or technical graduates usually requires employability skills/finishing skills and ERICA is arranging the services as per the tailor made needs of SME's.
- **Techno Doctor Services:** Whenever the SME's are having mechanical or technical problems their work suffers till the solution is worked out; as it is difficult to manage/organize repair and rectification quickly, they approach ERICA - such techno doctor services are being offered on levy of nominal charges.
- **Internet Data Center:** As it is costly for maintenance of IT

infrastructure/Data Center by each of the SME, the ERICA has established a Data Center and allowing all the SME's to source their data requirements on payment of requisite charges.

- **Business Incubator:** Established in 1997 it is for providing venture development services including technological/marketing support, providing venture capital and organize educational programs for enhancement of production, protection of intellectual property rights etc to companies.
- **Intern ship for students in Companies:** the ERICA is organizing internship, both short term and long term either locally or internationally; either engineering or others spread across 5-6 weeks or 16 weeks (full semester) and appropriate credits on successful completion.

Impact on Korean Economy and Society

The role of SME's in Korean economy may be noted from the fact that their share in exports during 1988 was 37.9% of the total and in 1994 it was 42.4%; where as only 27% of the products were sold on their own brand name. Even on Research the expenditure in terms of percentage of total sales grew from 0.12% in 1978 to 0.42% by 1993.The liberalization policies of the government later resulted in deterioration of their situation as the domestic markets were flooded with cheap foreign products putting pressure on local firms. Coupled with exploitation by Chaebols and changing market conditions the SME's were in dire straights. The ERICA initiative , first of its kind, is really worthy of emulation by India.

The Indian Scenario.

(a) India , after independence, adopted mixed economy and five years plan mode of economic development. Nehru had great vision about the Science and technology and importance of research and established several national level institutions exclusively for research purpose; not much stress is laid on synergy with Industry or commercial exploitation of technologies; hence for most part the Indian Research has, though enriched the field of Science greatly, its utilization for economic growth of the country is minimum. A few Indian models of University and Research and industry synergy are:

UGC: India is having a long history of existence of Institutions of higher learning decorated by Nalanda, Taxila, Vikramasila etc unique universities without any comparable Institution of such caliber any where in the world

at that time which attracted students from all over the world; even in the present times the universities at Calcutta, Bombay and Madras were established in 1857 where as at Allahabad in 1887; an inter University board was established in1925 and an informal UGC was formed in1945 to oversee the work of Universities at Aligarh, Benares and Delhi and all universities were brought under its control in 1947. The UGC looks after coordination, determination and maintenance of Standards of University education; it accords recognition to Indian Universities and releases grants in aid . As on date more than 615 Universities are functioning in the country. Though earlier most of the Universities carried out qualitative research in basic sciences and humanities, of late there is a marked deterioration in performance of Universities both in teaching and Research areas.

The Mandate of Universities includes imparting Higher education, Conducting Research in Basic and Advanced areas of Scientific and Technological fields and some of the Universities have done excellent work and were successful in transferring technologies for commercial exploitation to entrepreneurs/ Industries. But most of the Universities have become manufacturing Units of post graduates or Research Scientists but could not forge alliance with Industry in a meaningful way to achieve self reliance or contribute to the economic growth directly.(Ref.7)

The Government is in the process of taking a major policy decision regarding the abolition of all the 14 National level Academic Regulatory Apex Institutions such as UGC, AICTE, NCTE, MCI etc., and for creation of a single or two large Apex Regulatory bodies to take care of Medical and all other Higher Educational Institutions. A bill has been introduced in the parliament - "National Commission on Higher Education and Research" and after passing of the same, radical changes are expected to be effected to meet the Global challenges in the frontier areas of Science and Technology .(Ref.8)

IISC: The Indian Institute of Science or popularly called as the TATA Institute is a public Institution established by JN Tata in1909 for Scientific and Technological Research and Higher Education and it became a deemed University in 1958. IISC is truly the first and by far the best example of a PPP arrangement when the very concept of PPP is not in vogue. The IISC has established a world class reputation for carrying out qualitative research in important areas of Science and contributing richly to the field of Science. As part of its independent initiative for commercial exploitation of its fruits of

Research and Technologies, a separate entity has been created in the name of " Society for innovation and Development" (SID), a registered society to enter into meaningful collaborations with Industries in 1991; SID has became a very effective channel for extending assistance to Industries and Business Establishments to compete and prosper in the light of stiff global competition, turbulent market conditions, both local and international, and fast moving technologies; it is striving to achieve synergy between Scientists of IISC and the inventions/innovations of their research and the Industries and Business establishments in a cordial atmosphere for economic prosperity of the country as the ultimate goal.

The SID undertakes research and development projects based on individual or joint proposals from the Faculty/Scientists of IISC in collaboration with Industries, Business Establishments and national or international organizations through agreements; it has setup programme units which are work groups in identified areas that can undertake activities on a sustained basis. These Units undertake multiple projects with varying degrees of flexibility to facilitate and expedite execution of the projects; it promotes joint R&D programmes between IISC, National and International Organisations; the research areas range from: acoustics to Artificial Intelligence, Aerodynamics to Biotechnology, combustion chemistry to computational biophysics, Electro Chemistry to fluid Dynamics, Genetics to laser Spectroscopy, mechatronics ergonomics to molecular biology, neural networks to photonics, production design to solar/thermal instrumentation, Structural engineering to water resources engineering etc over 100 areas.

The vision of SID is to provide an innovative environment to enable students, faculty and alumni to build successful entrepreneurial ventures. The IISC encourages its faculty or the Scientists who intend to commercially exploit their research innovation/technology to become entrepreneur through an agreement with SID.

The SID/IISC success story in achieving synergy with private industry can be better appreciated from the fact that Boeing, the aerospace major, has entered into an agreement for investment of US $ 50 Millions per year for 5 years for carrying out technology development in 9 projects such as use of smart structures, application of light weight materials i.e., nano material alloys, their composites etc. and the designs to be tested in a virtual

environment being developed by the IISC for building next generation flights; already released US $2.5 millions; 30 faculty members from aerospace, metallurgy are involved for product design and manufacturing, civil engineering etc.,

The motto of IISC is to accept only projects which involve innovation research and reportedly turned down about US $ 20 millions worth of project proposals as they lacked research content; even then the demand from companies is so high that SID/IISC are not able to cope with the load. The IISC/SID have prestigious companies such as GM, Boeing, Intel, Microsoft, M&M, Automotive etc, as their research/business partners striving for the furtherance of innovative research and commercial exploitation.(Ref.9)

CSIR: A Premier Industrial Research and Development organization established in 1942 through a resolution of the then central legislative assembly and registered under registration of societies act 1860.

It is by far the world's largest publicly funded research and development organization having linkages with academia, R&D organizations and industry;

Mission: to provide scientific and industrial R&D that maximizes the economic, environmental and societal benefits for the people of India and serve the nation.

The niche areas are: affordable health care, sustainable energy chemistry and environment, smart and functional materials, engineering structures, design and electronics.

The CSIR has established 39 premier national level research institutions and 37 extension centers all over the country such as NPL. NCL, CCMB, IICT, RRL's, CDRI, CIMAP, CLRI, CFRI etc. which created a giant network and striving hard to improve the quality of life; it is an active party to prestigious global research alliance with lofty objectives of utilizing the global knowledge pool for universal good through world financing; its R&D portfolio contains every identifiable area of interest and almost as diverse as A to Z of Indian Science and Technology.

The contribution of CSIR laboratories to the field of science and engineering can be best appreciated from the fact that in 2009-10 4259 research papers were published in peer reviewed journals; applied for 161 patents in India and 179 patients abroad; 145 patents were granted in India and 319 were

granted abroad; as on date the organization is holding 2349 patent rights in India and 3054 abroad.

In the new millennium it envisaged to: reengineering the organizational structure, linking research to market place, mobilizing and optimizing the resource base, creating an enabling infrastructure, inventing in high quality science that will be the harbinger of future technologies.

In the 10th five year plan it has taken up 55 projects which includes: Spear heading small civilian aircraft design, development and manufacture; molecular biology of selected pathogens for developing drug targets, study of Mesozoic sediments for hydro carbon exploration, pollution monitoring nitrogen systems, environment friendly leather processing technology, developing cells and tissue engineering, new and improved road technologies, designing animals and plants as bioreactors for protein and other products among others. In the 11th 5 year plan 97 projects with budget outlay of Rs. 2650.39 crores have been approved. (Ref.10)

Socio fiscal impact: The large number of Universities have produced scores of qualified graduates and post graduates and served the cause of higher education field to some extent; but due to failure to carry out meaningful research or commercial exploitation through collaboration of industries, direct fiscal/financial contribution is very minimum where as social contribution is worthwhile even if opinions differ as regards quality of human resources churned out in all these years.

The success of IISC/SID should have been an eye opener for dormant universities but for reasons unclear they failed to capitalize the fertile field opportunities. In this regard, the partial success of CSIR in achieving collaboration with industries is fairly better though the cost benefit analysis may be disappointing because the establishment and other costs are prohibitively high and they have become a burden of sort due to failure to achieve financial self sufficiency even after 6 decades.

Feasibility of adoption of ERICA model in India

India is a country with 1.25 billion population with high growth rate. With stress on universal education and RTE, it is necessary to evolve proper strategies for utilization of this great opportunity of harnessing of demographic dividend. As there are more than 600 Universities, the possibility of making it mandatory to carry out meaningful research to

augment the development of cutting edge technologies and commercial exploitation through proper synergy with industries may be worthwhile. As regards the performance of IISC/SID the continuation of the good work, of course, on a larger scale will go a long way in economic growth. The giant CSIR with such huge human resources is unable to show the kind of results which will pull the country's economy out of woods. It is industrial sector, particularly SME's which are not only Back bone of economy but may be a shock absorber which can with stand vagaries of economic nature. In my opinion, ERICA model may be best suited to Universities and it is need of the hour to immediately prepare urgent plans - to achieve University driven Industrial cluster development, for local area development at a quick pace.

Financial, Socio and Political context

The nation and entire population is looking at the Politicians/government for relief from poverty, unemployment, high inflation/cost of living, dwelling units, better standard of living, Freedom from ill health, sanitation etc., basic human necessities. If ERICA model is adopted, employment opportunities will improve; industrial units will wean out people from red corridor; the economic growth/productivity will go long way in curtailing the inflation to low levels. Once such results are achieved in basic things, it will have cascade effect and people's satisfaction will improve. The benefits may be substantial.

Modifications to suit Indian context

It is true that ERCA model may be an ideal modus operandi for achieving SME industrial growth in a cluster form around each university, leading to overall area development but some modifications may be required: 1) First of all, areas of country interest/people's needs requires to be assessed 2) identification of suitable technologies if available to be adopted, if not, to be developed in a mission mode 3) enabling environment to be created 4) Industrial units, Business houses to be invited for knowing their requirements 6) universities to develop suitable courses to train the skilled manpower required for the SME's. 7) proper market survey (local and international) to be conducted and continued monitoring is needed. 8) suitable legislation changes needed if any to be carried out in a time bound manner particularly the labour laws and apprentice act etc. 9) large industrial houses, research groups, academicians to be formed into Teams

for attending specific tasks. 10) Bankers/ financial houses to be motivated to extend liberal finance. 11) removal of red tape and Single window clearance 12) Suitable land around Universities to be identified for industrial cluster development. 13) The Indian Chaebols to be urged to support SMEs by sourcing products, services from them.

In spite of theoretical feasibility, unless the main maladies of Indian system ie., cancer of corruption, lack of commitment and indiscipline are rooted out, the results may be ordinary.

References

"The Korean Chaebols"- Presentation by Prof. Woochen Kim, Korea University on 24.7.12 and the study material of KDI (pg 139-160)

"It is not easy being small"- Business Korea , Jan 1993 pg.14.

"Korean Enterprise-Quest for globalization"- Gerardo R Ungson, Richard M Steers, Seung Ho Park. Harward business School press 1997. Pg 82 to109.

"Strategy and policy for Structural adjustment of Small and Medium Firms"- Burk, Young and Cho. KKT seminar series (92) 1992 pg27.

"Too weak to survive"- Sohn Jie-Ae and Lee Yoo - Lim; Business Korea. Feb 1993 pg 24-30.

" ERICA profile document" and presentation on 31.7.2012 at 2.45 PM.

" UGC web site"

"Prof. Narendra Jhadhav, Member, Panning Commission, lecture on: 'challenges in higher education' on 8.8.2012.

" IISC web site"

"CSIR web site ".

Engine Of Growth: Korea's Export-Oriented Industrialisation

N. Ashok Kumar*

South Korea had attained independence in 1945 from the Japanese colonial rule just two years ahead of India, since then the achievements in the sphere of Economic development and increase in the per capita income of Korea is commendable. Nevertheless, both the nation had passed through the same kind of issues in terms of partition and wars in the initial years of Independence. Korea's journey from poverty to prosperity in a short span of 3-4 decades is mainly based on Industrialisation with emphasis on Export-oriented approach and promoting the competition among the industries on international arena rather than concentrating on domestic market by positive discrimination. To achieve the goal, South Korea formulated progressive industrial policy of Export promotion which led to State–led Outward–oriented economic development. Industrial development plays a pivotal role in economic development.

The major share of valuable natural resources like coal, iron ore had gone to North Korea after partition. For South Korea with limited natural resources to become an economic power, the industrialisation and economic development was intimately linked to export promotion, industrial upgrading, human resource development and institution building.

Immediately after independence, the policy mainly focused on assigning property rights/privatisation of the industrial properties formerly owned by Japanese during colonial rule (1910-1945) to the locals. The policy responses followed were rent-seeking and crony capitalism, half hearted import substitution and over valuation of Korean Currency to aid maximisation. Then the student revolution against crony capitalism and corruption in 1960 and Military coup in 1961 following chaotic political situation changed the

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focus from Crony capitalism to Economic modernisation through export promotion industrialisation.

Korean transition in industrialisation can be seen in three distinctive stages viz., Factor Driven, Investment Driven and Innovation Driven according to the industrial policy followed.

1960s: Export Promotion Development Strategy

In 1960s, since Export Promotion had been seen as a means of obtaining hard currency, pursuing industrialisation and securing economic and political independence, the main emphasis of the industrial policy was on support export development. To facilitate this, Economic Planning Board had been established for Policy Coordination and budgetary powers with a multi-year horizon. Five year plans had been formulated and held monthly review meetings with blueprint on implementation, monitoring and feedback. Another important measure was nationalisation of Commercial banks.

The major emphasis of the export promotion policy was Distortion of Microeconomic Incentives. The focus was to establish the Export Contest in which best exporters were rewarded with further incentives like tax benefits, credit allocation and entry barriers through a regular monthly and yearly evaluation process led by President with Ministry and government officials, Business leaders and scholars. The policy was sector neutral but firm specific on export promotion. The industries in this phase were mainly dependent on the cheap labour, like textiles. Emphasis was also given to the strengthening of road and rail network to support the new units.

1970s: Heavy and Chemical Industry Drive (HCI)

The focus during this period had shifted to specific industries especially HCI (heavy and chemical industries) for development. In this stage also, the successful firms in 1960s in the export promotion were selected to lead HCI industries with the export as major focus. During this period, the Korean economy moved from agrarian society to industrial society. To support this policy, the corresponding science and technology policy focused on establishment of Government research institutes, technical and vocational schools. In this stage industry policy emphasised on government investment.

This approach under the leadership of President Park, achieved of economic development and increase in per capita income. Thus, Korea had changed

from aid recipient nation to aid donor nation. The another aspect of both export orientation strategy and HCI drive was conglomeration i.e, amalgamation of natural resources in effective manner to compete in global market.

The export oriented industrialisation and HCI had given thrust to the economy development. The achievement need to be seen with strength Korea possessed in leadership, human resource and New Village Development Movement (Saemaul Undong) which brought the development to the rural areas also. The income growth in urban and rural areas had grown more or less in the same pattern. Both in rural and urban development, Korea had followed on the dictum of "Help those who help themselves".

1980s and 1990s Stabilisation and Introduction of Economic Democracy and Egalatarism

In this period, the focus shifted from HCI to technology-intensive industries. Necessary revision of Korea Fair trade Act and Industrial Development law of 1986 was made. Economy Democracy was established along with the new the constitution following the democratic movement. Focus was put on SMEs (small and medium enterprises). In the pre crisis period of 1997/98 the focus was on de-concentration of industries and balanced development.

In 1997/98, Korea suffered serious financial and economic crisis. But Korea recovered from the shock through government – led reform through macro-economic policy. Korean economy and industries had withstood the latest global crisis and stabilised.

In addition to the policies, Convergence of industries and educational institutions like Polytechnic colleges, Engineering colleges, medical universities and research institutions has contributed to maximum extend in the growth and success of industrialisation in Korean economic development which has leveraged not only financial but also technical expertise between the government supported institutions and the industries.

At present, Korea has identified the importance of moving towards knowledge economy from imitation way of industrialisation. The gross expenditure of R & D has been increased from mere 0.5 per cent of GDP in 1970s to almost 2.7 per cent of GDP in which the major contributor is private sector.

Development of Special Economic Zones to foster the FDI investment especially in technical education, port development and health care and tourism which will yield more to the completion of the industries in R&D and man power.

Industrialisation in India in comparison with Korea

India inherited a weak industrial base, poorly developed industrial infrastructure and a stagnant economy at the time of her independence with few textile industries, sugar and cement industries in some regions. The emphasis of India in Industrialisation was import substitution in a mixed economy where as Korea focused on export promotion as the fundamental difference in achieving the development. The both countries emphasised on planning process of Five year plan, Korea had succeed in that because of serious and sincere monitoring and evaluation and support based on competitiveness in industries in international market.

India laid major emphasis with Public Sector Undertakings and heavy industries in the first three five year plans. This was based on protection and reservation policy which inadvertently promoted in-efficiency and lack of international competitiveness. In the fourth five year plan, the government had shifted industrial policy to employment generation and emphasis had been given to small scale industries. Again in 1980s the policy shifted to large, small and export orientation. In the same period Korea had followed an exponential path of development through its industrial policy, India had not yet found a way for economic progress through industrialisation.

In 1990/91 crisis, India had come with liberalisation of industrial policy from licensing raj. Indeed, it had helped in more players to participate in the manufacturing industries and helped the economy in increasing the resource utilisation and competitiveness. The industrial and GDP growth post reforms since 1991 was commendable but the growth didn't trickle down to large populace in terms of employment generation and increase in per capita income in rural India. The main bottlenecks in India were lack of educated man power and basic infrastructure, large dependency on agriculture and increase in population. But in Korea, the growth in Industrial sector and economic development had been translated in to employment generation and egalatarism because of the education as well as the government emphasis on infrastructure development to support industrialisation by developing the road and rail infrastructure, building up

the industrial town and planned development in rural areas by way of Samuel Movement and agriculture sector.

India's manufacturing sector didn't generate as much employment which required in reducing the dependency on primary sector because of the industrial policy which initially supported the heavy industries and later shifted in late 1970s to small and village industries which lacked competition and efficiency.

Lessons from Korea's Experience

- Planning process should be continuous, responsive and consistent through proper monitoring and mid-term evaluation.
- Identification of priority areas with emphasis on national interest rather than political compulsion.
- Promoting and supporting the competiveness in Industries on International market rather than protection and promotion based on the domestic market.
- Like Samuel movement, the present NREGS scheme needs to be implemented in letter and spirit to build the capacity in the rural masses and rural infrastructure.
- Effective policy and amendments to laws related to labour, land and natural resources which help in sustainable industrialisation and development. (we are still following land acquisition act of 1894 without proper policies regarding compensation and rehabilitation, which is leading to delay and litigation)
- India need to convert the strength of youth nation to economic growth and egalitarian development by increasing the literacy level and employability through vocational training to support the industries based on the indentified manufacturing industries.
- Emphasis need to be given on basic infrastructure development in road, rail, ports and electricity to give support to the industrialisation and tertiary sector development.
- The policies need to be made and amended to suit the present global need and changing investment arena rather than sticking to the sentiment and political interest.
- India has the expertise in an isolated manner in R&D rather having interaction and integration between industries and various technical

colleges and universities for the development of industries and development. So, more emphasis for R&D and convergence of industries and technical institutes to harness the human resources and technical know-how for the industrialisation and economic development need to be addressed.

- Development of Special Economic Zones to enhance the FDI and promote the employment generation and economic development
- Integration of various regulatory mechanisms which deals with industries to enable quick decision making in interest of industries and economic growth.
- Create investment friendly environment like cheaper interest rates policy, tax reforms, etc
- The actual fruits of post liberalisation growth has not been translated into reduced inequalities in the society.

In India, industrialisation needs to be seen as an important tool to address the unemployment and economic development. Till date manufacturing industries contributes only 10% of the labour force and around 60% of labour force depends on primary sector for employment especially agriculture which contributes only 20% of GDP. At this point India should bank on its strength in human and natural resources to augment and develop competitive industries in international market.

Industrialisation is important for economic growth but has to be supported by all other factors like Human resource, infrastructure and financial sector. In case of Korea, the Export oriented industrialisation played major role in development because of the other factors which were ready to harness and support the development. In India, industrialisation had gone through various bottlenecks in terms on policy and other factors to give impetus as factor for development. In the 21st century, India has been viewed as one of the major power centre in global field. Taking advantage of this, India needs to address the bottlenecks in Industrial and Infrastructural sector with proper policies and global participation rather than looking on in-efficient, protective industrialisation. So, liberalisation and enhancing investment environment through properly regulated polices and planning mechanisms are very important as shown in economic progress of Korea.

Cluster Development In South Korea In Particular Reference To Biotechnology Sector: A Ringside View

Satyaprakash T. L.*

Introduction

Ever since the concept of cluster development was conceptualised and crystallised by Michael Porter during 1990s, several countries have tried to emulate the model by concentrating on one of the corners proposed integral to the growth diamond of economy that he theorised (1). A cluster is a competitive industry model driven by innovation, talent and the dimensions of the efforts that then ensures a successful cluster formation in sustainable fashion to garner competitive as well as sustainable growth advantage for an economy (2). Nevertheless, it is certain that there is no singular blueprint for cluster development and this paper makes small effort to understand the South Korean cluster strategy for biotech industry. Biotechnology offers a strategic investment opportunity to industrializing countries like South Korea and India. However, the characteristic nature of the business in sectors like science or biotechnology that in-fact is largely research and development oriented, provides an interesting and important case to examine the strategies involved. Further, it could be a case of strategic investment and may not be backed by a pure business model. For example, in 1938, the US government forced by the scarcity of copper had to smelt its entire silver staked in Fort Knox for the production of cables to be used in Manhattan project. This strategy had been clearly one of the biggest factors for success of then America economy.

An Overview of Clusters in South Korea

The cluster like "London's Stockley Park" is a classic example of bottom–up approach that exploited creative talent of the city. Similarly, "Strangen

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Biotech Valley" in Sweden and "Boston route 128" at USA represent natural clusters of biotechnology in the world. In contrast, the Ginseng processing in Guemsen province or Science city of Busan province in Korea is a typical top-down approach where in the Government supported the local entrepreneurs and private players in facilitating the formation of cluster. Similarly, the "Songdo International School "which forms the heart of biotech and drug designing cluster in South Korea is developed largely because of government's commitment to develop biotechnology as one of the theme areas of SME development in the country.

Development of Clusters in South Korea

The period from 1960s to 1980s, represent formative stages of industrial development in South Korea. It is acknowledged that 'Chaebols', the industrial powerhouses in Korea could acquire the technology from anywhere and could achieve excellence in both product designing and delivery. Initially, the emphasis was on Heavy and Chemical industry. Later, during the period, 1980s to 2000 the structural adjustment and rapid acceleration of the industry captured on (3). Initial success of cluster development in South Korea must be attributed to Chebols that over a period created ancillary industries in the form of tier-1 and tier-II industries. It is important to bring out the fact that the sectors like manufacturing and heavy industry promote classical 'hub and the spoke model' and in the process create huge industrial clusters. Thus, chaebols created natural clusters with huge advantage of easy clusters accessibility for requisite interventions by government. Chaebols being capable of investing in in-house R&D created innovations and the same was reflected in the final products. The government helped the Chaebols in tweaking the policy formulations rather than directly getting involved in business strategy and technology positioning. It was realised that this heavy crystallisation in chaebols meant that SME networks were weak (4). This is in complete contrast with the automobile sector elsewhere in Detroit and Ontario where the thrust for innovation came from core industry and it was actually tier-I and tier-II industries that actually propelled the innovation (5).

The Development Strategy: A Comparison with in Asia

The model of development has been significantly different among Asian superpowers in this sector. Where the Taiwanese policies maintained a

continuum to support the SME networks supporting them in incremental manner, the South Koreans opted for complete reorientation of their policies that hitherto supported Chaebols and SMEs. The Chinese did it by building huge biotech parks and supporting bio-entrepreneurships (6). In India, the research investments have been made primarily through the R&D institutions in public sector.

The Government Efforts in Positioning Biotechnology

In Korea, in 1994 the project 'Biotech 2000" was launched to catch up with world's leading biotech powers by 2007. An effective framework was formulated to foster the knowledge and innovation based industrial development. The Korean government made conscious efforts to develop South Korea as IT-BT capital of Asia fully recognising that both of them are high-risk, high-tech and high-return ventures. Further during this period a substantial allocation of $18 billion was made for biotech related research and development efforts through an ambitious project Biotech-2000, through its nodal agency National Research Fund. There were several institutional set ups for example Korea Biotechnology Commercialisation Centre (KBCC) to support small and medium firms in the sector. Some of the other initiatives to develop the sector were 'Initiative -577', aimed to support SMEs (2008), 'R&D Plan for Green technology', aimed to foster bio-energy projects (2009) and '2040 Future Vision'(2010). There were complementary plans in education in the form of project "Brain Korea" that started in 2000 and 'Connect Korea' to support industry –academia relationship.

Developing Talent Pool

For the creation and retention of talent pool India and China followed a two track approach of both domestic development and overseas recruiting. The countries like Israel, Korea, Japan and Germany continued to develop domestically. Singapore like US, the leaders in the applied biotechnology continued with the strategy of overseas recruiting (7). The attractiveness top talent has a strong correlation with presence of overseas recruitment and competition (8).

The Concerns

Korea's competitiveness in new nano-material sector and bio-medicine is pegged at 57.4 in technological competitiveness and 54.7 in workforce

competitiveness with the leading country given a score of 100 (7). The Indian Competitiveness is far lower in overall technological standing which is reflected in INPUT score of 19 vis-à-vis 44 of South Korea for the period 1993-2007, for individual sector of Biotechnology India has done fairly well. Further, the institute (SERI) has projected an annual demand of 4410 number of top level science and technology personnel for the years 2013-20 as against the present supply of 1714 personnel annually to support the bio-medicine and nano-technology alone in Korea (7).

Technology Alliances: A Missing Link in Korean Biotechnology Sector

One of the studies conducted to evaluate the 29 identified technology alliances between various stakeholders during the period 2002-2006 concluded that majority of them were mere announcements and several of them were just MoUs.[22] Though there is a growing trend for joint collaborations lot is found wanting. Particularly during 1982-97 there were 650 cases of innovation and only 1.7% of them were actual technology transfer to bio-industry. Some of the recent studies also have identified the insufficient development of technology transfer intermediaries as a reason for poor collaborations[20]. Some studies indicate that simply there is no enough basic research getting concluded.[21] Thus the absence of effective collaborations is explained as 'missing links 'in bio-technology sector in Korea.

The planning of some of the major clusters included holistic planning focusing on the university-industry and public sector synergies. The policy documents state a multi-disciplinary approach and highlighted a strong interface between electronics, chemical engineering, pharmacy, computing and machine making with that of bio-technology (7). The Incheon Free Economic Zone having presence of various public sector institutions like KBCC and investments by giants of industry like Pfizer intend to support the talent pool through its platform Songdo Global University. The Seoul edition of The Chronicle, a popular newspaper has published the various hiccups the university is facing in implementing the project. North Carolina University has announced an indefinite hold on its plans to commission its university campus. Similarly, George Mason University and University of Utah have expressed their wish to start with smaller projects instead of going big (9).

It is well accepted that South Korea doesn't have a thriving SME sector therefore it is naturally inclined to build a strong university-academia relationship to facilitate technology creation and technology transfer to its SMEs. One of the best example is in Korea Polytechnic University (KPU) that was established in 2003 on recommendation of Ministry of Science and Technology. Motivation to establish the University was to reinforce the concept of learning in factory premises and experimenting in the campus. The KPU thus considers the factory as campus and campus as laboratory. (14). So far, KPU has come out with just 74 technology patents in various disciplines including biotechnology and the performance cannot be graded high. Probably, it will take several years to establish requisite synergies to expect great capabilities in technology creation and it will be unfair to expect Korea to turn biotechnology giant overnight as Boston route- 128, one of the world's most prolific Bio-tech clusters that took more than six decades to establish its mark. It is worthwhile to mention here that Boston has more than six world-class Universities and institutions in its vicinity that has been a major factor in the development of Boston- route 128.

Investments and Fundings in Knowledge Intensive Industries

In this context, the fact to be accounted first is that private sector, in general is/would not be eager to invest in business with pure basic and fundamental research orientation like biotechnology for the simple reason that investments are largely equated in terms of tangible and translatable profits with in given time frames. World over, largely the public funding has been instrumental in fuelling such research. The Google emerged out of Internet which was essentially an innovation funded by National Research Foundation (19). Similarly, Integrated Circuit came out of US Defence (Army) laboratory. The transistor came out of Bell Laboratories (AT&T) with active public funding. Today, we see several spin-offs that were created out of these inventions. In US, the defence researches are funded by agencies like DARPA (Defence Advanced Research Product Agency) and the basic research outcomes are allowed commercialisation (11). This model has been extremely successful in creating core competencies in frontier technologies in US. However, the Korean success depends on foreign Universities, innovations and investments by private agencies. Although, Korean agencies have projected

the Incheon Free Economic Zone as an effort to reposition South Korea as leader in biotechnology it will be too early to predict a great success. Nevertheless, the investment will be strategic and cannot be termed as a waste as it will create enormous capabilities to support endogenous innovations.

Key Bottlenecks in Biotech Industry

One of the major characteristics of biotech industry is its high-risk nature. The biotechnology is considered an uncertain sector because of greater role of serendipity, strong R& D and resultant spin-offs. A substantial portion of path breaking discoveries and innovations in this sector resulted out of serendipity. The outcomes depend a lot on life forms how the life forms react to a particular scheme experiments. This also creates information asymmetry between technologists, managers and investors (16). It thus needs a web of networks, alliances and structures that are vertically integrated. It is also interesting and a widely accepted notion that smaller firms are more effective and successful than pharma and biotech giants (12). The monetisation of research findings, ethical issues, long gestation period, patent issues, hassles in clinical trials etc. represent few of the obligatory hurdles in the sector (18). Therefore, Korean investment in biotechnology needs to be evaluated in this backdrop.

Another issue is the way the firms and technologists are organised in this particular sector. In Europe and United States, the SMEs in biotechnology developed as household industry. The enzyme and protein related firms, fermentation based firms are good examples of the same. There are clear indications that these firms being unorganised and unstructured hardly patent the technological findings. The firms choose their own ways of protecting the innovations and therefore the innovations are never shared anywhere. Thus, the usual advantage of cluster development is lost under these circumstances (13). It is also observed that in initial stages there is strong tendency to collaborate with the government institutions. The trade-off of sharing the technology will offset by getting regulatory sops because of first mover advantage (14). The initial euphoria of industry academia partnership usually moderates over a period. More than anything else it is very much evident that any industrial cluster goes through phases of seed, start-up, consolidation and maturity (17). The natural clusters once formed because of factor conditions will mature to benchmark clusters when

various levels of innovations are adopted. The innovation lead clusters like the one in biotechnology are actually the last phase of development. That is the critical reason why majority of the major firms in biotechnology insist for models of gradual expansion. The huge initial investment will be a sunk cost without substantial dividends. It is substantiated by the investment in R&D data collected from US and Swedish Biotech organisation in 2002. The probability of success of technological breakthrough in protein based pharmaceutical is lowest at discovery stage and progressively increases during preclinical and clinical trial phases-I, II and III. The success across the each of the steps of value chain is 14, 19, 29, 66 and 99 percentage, respectively. It is found that the enthusiasm of the private entrepreneur is the lowest at discovery phase and essentially, it should be encouraged by research grants by government at this stage.

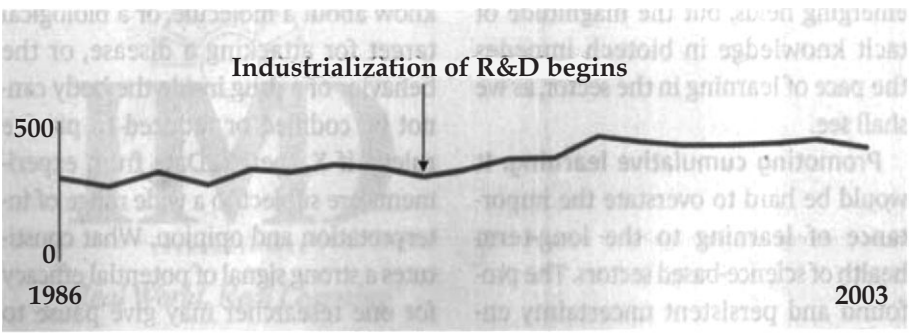

Figure 1: Number of compounds in human clinical trials from 1986-2003 (courtesy...)

In spite of major efforts in drug designing using a combination of genomics, bio-informatics and combinatorial chemistry the total number of new products and molecules designed and forwarded to the phase of clinical trials is not yet significant (Figure 1). During the period 1996 to 2003, there is hardly any publicly held firm with a notable exemption of Amgen, that has made profit consistently though their revenues have soared substantially.

Empirical Evidence from a European Cluster

The innovation based industrial development has three important components:

- Knowledge & technologies
- Actors & networks
- Institutions[23]

The interface between these components is crucial to impart competitiveness to the sector. The internet-software-telecom relationship can be taken as an example to explain this interface. The "Biotech Valley" in Strangnas is excellent example to explain similar relationship in biotech sector. Where the firms Pharmacia, Pfizer and Astra Zeneca infused private investments in the region, the Karolinska Institute, KTH (Royal Institute of Technology), Uppsala and Stolkhome University provided support in terms of academia. Even today, the richness of biotech resources in the region is very much conspicuous in terms of production and research. Though it is acknowledged that the innovations in knowledge based industries take place to the highest degree in clusters, such clusters may remain embryonic or become stagnated and non-functional for several possible reasons explained above and are termed as 'pathetic clusters'. They may not propel the porterian drivers of innovation but may result in organisational and social innovations (15)

The Indian Context

The "Genome Valley" in Shameerpet of Hyderabad provides an excellent example of top-down approach where in the commitment of the government has resulted in well-planned biotech cluster. The Genome Valley was conceptualised in 2000 and all infrastructural support system is already created. The ICICI knowledge park was established in PPP mode with 200-acre land allotted free. The IKP Knowledge Park will provide incubatory support to entrepreneurs in the cluster. The two real estate firms i.e. Alexandria and Lonza have been involved in creation of plug and play infrastructure. As the land acquisition was done long back in 2000 itself, the component of cost of the land is reasonable. The city has provided adequate number of technology professionals and it is labelled as the most successful biotech cluster in the country. However, the occupancy has not crossed 50% as on today. There is no component for successful recipe that is absent in Genome Valley. Therefore and in the light of facts about "Genome Valley", the success of Korean biotech cluster of Incheon free economic Zone may not be an easy guess and certainly not very soon.

References

Porter, M. (1990) The Competitive Advantage of Nations, London, Macmillan

Fostering innovation–lead clusters: A review of leading global practices; a report from the Economist Intelligence unit (2011)

Industrial park development strategy and management practices (2011), modularisation series, Ministry of Knowledge economy

Hassink, Robert (2005) How to unlock regional economies from path dependency ? From learning region to learning cluster European Planning Studies, Vol. 13 Issue 4, p521-535. 15p

John Holmes, Tod Rutherford, and Susan Fitzgibbon (2004) Innovation in the automotive parts industry: a case study of the windsor-essex region, Paper presented at the 6th Annual National Conference of the Innovation Systems Research Network, Harbour Centre, Simon Fraser University, Vancouver BC, May 13-15

Hwan Wang, Jenn Chen, Tsung-Yuan Tsai, Ching-Jung (2012) In Search of an Innovative State: The Development of the Biopharmaceutical Industry in Taiwan, South Korea and China. In Development & Change, Vol. 43 Issue 2, p481-503, 23p

Bae Seong-O (2012) Korea Needs to Groom More Top Scientists and Engineers SERI Quarterly, Vol. 5 Issue 3, p14-21. 8p

IMD World Competitiveness year Book (2011)

News paper Reports as published in The chronicle on 08.08.2012

KPU (Korea Polytechnique University), Seoul: Brochures

Edward Luce (2011) Time to start thinking about America and Spectre of decline, Little Brown Book Publishers, London

Mullen, James C. (2007) Can Science be a business? A letter to the editor in Harvard Business Review, Vol. 85 Issue 2, p150-151

Basu Jisnu, Sarkar Bijan, Bhattacharya Aradhenu Sarkar and Bhattacharya (2010) Business to University to Business (BUB) Model: An Alternative Methodology for Technology Transfer to Rural Industrial Clusters in India. Journal of Knowledge Globalization, Vol. 3 Issue 2, p29-49. 21p

Hyundo Choi, Sangook Park and Jeong dong lee (2011), Government-driven knowledge networks as precursors to emerging sectors: a case of the hydrogen energy sector in Korea in Industrial and Corporate Change, Volume 20, Number 3, pp. 751–787

Mattson, H. (2008) Innovating in Cluster/Cluster as Innovation: The Case of the Biotechvalley Cluster Initiative. In European Planning Studies, Vol. 17 Issue 11, p1625-1643. 19p

Pisano, Gary P. (2006) In the book 'science business' published by Harvard Business School Press Books. p1. 272p

Wonglimpiyarat, J. (2005) Financing innovative businesses through venture capital. International Journal of Entrepreneurship and Innovation Management, Special Issue, Inderscience

Pisano, Gary P. (2006) The Performance of the Biotech Industry: Promise Versus Reality, In Harvard Business Press Chapters .

Wikepedia.

Choi, Y.2001. "Advent of the Post Genome Era: Where is the biotechnology Industry Headed?" KIET Industrial economic review.5(6).

Yun, M.2005 ."Regulatory Regime Governing Management of Intellectual Property of Korean Public research Organisations: Focus on Bio-Technology sector" in "turning Science into Business"

Yun, M., (2007)., "Technology Alliances in the Korean Biotechnology Industries: the Missing Link?" presented during UNCTAD Conference on "Meeting of experts on FDI, Technology and competitiveness" at Geneva March 2007.

Malerba, F.(ed.) (2004), Sectoral Systems of Innovation: Concept, Issues and analysis of Six Major Sectors in Europe. Cambridge University press: Cambridge.

Development Of New Towns In India– Lessons From The South Korean Experience

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Abstract

This paper aims to establish the need for development of new towns and cities in India as a response to the rapid increase in number of urban residents in the country. In doing so, an attempt is made to learn from the South Korean experience of developing new industrial and residential towns, which it has done fairly successfully and in a planned manner. Apart from bibliographical sources, the paper also draws from the author's experience during the visit to Seoul, South Korea in July-Aug. 2012 as a part of Mid Career Training Program for IAS officers – Phase III, and in particular, field visits to the towns of Ulsan and Incheon Compact Smart City, both of which are amongst the finest examples of new towns developed in South Korea.

New Towns

The concept of new town is largely a British concept, having its roots in the establishment of 'new communities' in the post Industrial Revolution Britain. The development of 'new towns' came into prominence during the large scale re-construction projects after World War II. While different scholars have defined 'new towns' differently, the definition of Galantay[1] – "intentionally formed and planned community" is generally accepted. In its simplest terms, a new town may be defined as a **planned, artificially built and settled city in a previously under-developed area.**

South Korean Perspective of New Towns

South Korea, with an urban population of 83 percent in 2010 and an estimated annual growth rate of 0.6 percent[2] is one of the most urbanized countries in the developed world. The pace of urbanization itself was

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startling as the urban population doubled from 40.6% (1970) within a period of about forty years. Most of the nation's urban policy prerogatives were responses to this unforeseen growth of its urban residents. The Korean policy of developing new towns has been guided by the expected twin factors of geographical development of the national territory and absorbing rapid urbanization without compromising on amenities.

The development of new towns in South Korea can be studied under three distinct periods and phases:

Phase 1 - Development of Industrial New Towns– Under the leadership of President Park Chunghee, the first (1962-66) and second five year plans of South Korea (1967-71) were finalized which lay heavy focus on promotion of heavy and chemical industries. The political leadership showed tremendous vision in developing Ulsan (1962) as the first new site for industrial development of the country. In 1972, Hyundai built the world's largest shipyard at Ulsan. To promote industrialization following the adoption of Korea Industrialization Master Plan, several other industrial new towns were developed which included–Pohang (1968), Gumi (1973), Changwon (1977) and Yeocheon (1977). Banwol New Town which was developed in 1977 within the Seoul metropolitan area to spatially distribute the population and industries was the first industrial new town in the modern sense as it was built on an area from scratch where nothing existed.[3]

Phase 2 - Development of Residential New Towns– The 1980s saw a period of rapid migration from rural areas and Godeok (1981), Gaepo (1981), Mokdong (1983) and Sangye (1985) new residential districts were built. Late 1980s was a period of large scale increase in land and housing prices in Seoul and this led to social tensions and discontent. As a response, a major development of this period (1989-1996) was the development of five new cities – Bundang, Sanbon, Ilsan, Jungdong and Pyoungchon around the Seoul area to ease the population pressure on the capital. This involved development of almost 50 sq. km of area for a population of 1.17 million people in almost 3,00,000 residential units, with a large chunk being reserved for lower and middle income groups. These five new cities are together known as the "first generation new cities".[3]

Phase 3 – Development of 2nd generation new cities and U-cities– Drawing on its experience of first generation new cities, the Korean

Government started an ambitious program of development of 2nd generation new cities from 2001 onwards. These were based on 'planning first, develop later' model and shifted the focus away from mere construction to a more inclusive and sustainable settlement, giving high priority to soft requirements such as operations and maintenance, ecology, design and aesthetics. Being developed as compact and smart cities, they heavily use technology to improve the quality of living of their residents. Thirteen such second generation cities are under development, including eleven in the capital area and are expected to be fully functional by 2015. They will provide 7,12,000 residential units over a total area of 164 sq. km.

South Korea is also developing about 15 U-cities (Ubiquitous Cities) which will have seamless integration of information systems (like common smart cards, smart homes etc.) and will heavily use Information technology to improve living standards of citizens.[4] The first of these – Hwaseong-Dongtan has been partially completed and made functional in 2007.

What South Korea has been able to achieve through its new town development program is really praise-worthy. As a nation, it has shown tremendous vision and commitment to foresee its future requirements and plan well in advance, be it industrial complexes or residential areas. The new industrial complexes provided the base for setting up of heavy industries which subsequently led the Korean export oriented growth story. The new first generation residential towns helped stabilize the property prices and also provided accommodation to the most deserving and the needy, thereby mitigating the social unrest which had begun to brew. Now, the nation has taken its efforts to altogether new levels by introducing the concept of U-cities, which are no less than a miracle. Bum Hyun Lee writes on U-cities "when a big fire breaks out in the city, the local information of the accident will be automatically sent to central disaster control system and fire stations nearby. When people get up, they can receive various types of information automatically and have a well-balanced meal. When they go to bathroom, their health status will be automatically checked." [3]

Urbanization Trends in India

The following table shows some of the indicative trends in the urbanization process in India[5]

Period	1971	1981	1991	2001	2011
% of urban population	20.22	23.73	25.72	27.78	31.16
Annual exponential growth rate during the decade		3.79	3.09	2.73	3.18
% of urban population in Class I cities *	57.24	60.37	65.20	68.67	70.6

(***Source:*** Census of India, see also References)

Further, the following facts are noteworthy:

- The absolute number of people living in urban areas in 2011 is 377.1 million, which is an increase of 91.0 million over the number in 2001.
- The percentage growth in migration from rural to urban areas during 2001-2011 is about 24%, which increased from 21% during 1991-2001. The natural growth rate however fell from 59% to 44% during this period.[6]
- The period 2001-11 saw, for the first time ever in the history of the country, more people added in urban areas as compared to the rural areas (90.4 million). The overall growth rate of population in urban areas during 2001-11 is 31.8%.
- The top 100 cities in the country account for 16% of the population, produce 43% of the total output but occupy only 0.25% of the land area. In 2011, there are 3 cities with population in excess of 10 million and 53 million-plus cities in the country.[6]
- While the estimated plan allocation for the 11th FYP for rural development (RD) is about Rs. 280 thousand crores, the allocation for urban development is only 22 thousand crores i.e. less than 8% of the RD outlay.[7]

An analysis of the figures above leads us to conclude that whereas the growth rate of urban population in the country has been quite sluggish, and maybe, even lower than expected, the absolute numbers are large.[8] Further, it is marked by the interesting duality of fall in natural growth rate and increase in rural-urban migration rate. With the rural-urban migration trend likely to continue, and with about 800 million Indians living in villages, it is clear that they cannot be accommodated in the existing urban centres which are exploding at the edges and not even equipped to take care of their existing residents. As per census estimates, there isn't a single city in the country

which has a 24 hour power supply or water supply. The only way to accommodate more people in existing urban centres is to go vertical, which would be a daunting task considering that less than 5% of free land space is available in such areas. Developing all the 6,00,000 or so villages in India to urban standards is also neither viable, nor feasible. And it would not be a good idea to deny our rural brethren, the higher standards of life that city life can provide because of economies of scale (though arm-chair philosophers may argue otherwise).

It is very difficult to re-plan existing urban areas and most local panchayats vote against being merged into urban areas (political considerations, largesse of RD schemes?)[9] **The answer may thus lie in development of new cities – from scratch!**

It seems that we have forgotten the fact that the first planned cities in the world were in India (Harappa, Mohenjodaro). Fatehpur Sikri of Akbar and Jaipur of Swai Man Singh are also new planned towns in a less formal sense. However, post independence, very few new towns and cities in India (with Navi Mumbai, Greater Noida, Chandigarh, Bhubaneshwar, Pimpri-Chinchwad and Gandhinagar being some prominent exceptions) have been developed. Even in these new towns, the building industry has been taken to be the main objective and settlement has been treated as an adjunct rather than a core activity and the important issue of nurturing the town has been overlooked.[10] However, post 2010, some spurt in activity is seen with several new towns being planned in Maharashtra, Gujarat and Chhatisgarh but most of these are yet at planning stage.

Although estimates of requirements vary (*management guru Prof. C.K. Prahalad had estimated requirement of 500 new cities by 2022 in annual United World College Lecture Series*), even going conservatively, and by extrapolating the census figures to the next twenty years, a minimum of 200 million people would be added to the urban population. (McKinsey Global Institute 2010 Report estimates this figure to be about 213 million) Assuming a viable city size of one million people, we would have to add at least ten new cities every year for the next twenty years if the further expansion of the existing urban sprawl is to be avoided. Further, geographical targeting of the new cities will have to be done studying the spatial migration patterns and the existing location of Class I cities rather than uniformly spreading them all over the country.

Applicability of South Korean Approach in Indian context

For development of new cities, the following are the critical input factors– Land, Labour, Technology, Indigenous Expertise and Capital.

- Land and Labour- India is better placed than South Korea as regards availability.
- Indigenous Expertise- By 2020, the global construction market would increase to 1.27 trillion dollars and would be led by USA, China and India. The indigenous expertise, with the Indian companies consistently getting integrated with the global economy should not be an issue in times to come.[11]
- Technology- State-of-the Art designs and technology for setting up new cities are now globally available and while Korea may have an edge at this point, availability of technology in a free market is really a sub-set of the input–capital.
- Bum Hyun Lee[3] has estimated that there are 108 new city projects at an estimated amount of 940 billion dollars under execution in the world in 2011. This translates into an estimated 9 billion USDs per new city and at this stage, India may not have access to capital resources of this magnitude. However, these costs are for full scale development of high-end U-cities and are likely to be much lower in the Indian context (lower labour costs, material costs, land costs etc). **Further, any city is a self financing unit and as it progresses on its time-line, it will generate its own financial resources for its growth and sustenance (employment, taxes, productivity)**. However, high initial investments by the National Government (case to case basis, depending on the backwardness of the area), private sector investments and soft loans with at least 10 year moratoriums from multi-lateral agencies would be required to fund such development.

Korea is itself keen to export (and develop, through its private companies), it's model of 'New Cities' to the rest of the world. It is understood that it has signed an MoU with the Azerbaijan Republic for one such project named Silk Road.

Some lessons from the Korean development experience of 'new towns' are summarized below:

- We must plan and develop new towns, **before we are forced to**. The development should be a well-planned exercise rather than a knee-jerk reaction.
- For residential new towns, stabilization of accommodation prices/rentals should be an important consideration. The number of residential units and the proportion ear-marked for low income groups (this was 67.5% in South Korea) should be done with this larger objective in view.
- Balanced economic growth of national territory should be paramount while developing new towns.
- The residential new towns should be developed keeping in mind, the existing topography of the area and without disturbing it. Rather, maximum landscaping value should be extracted.
- A new town should not merely be a construction exercise but should be carefully settled, developed and nurtured as an organic exercise.
- New towns provide us with exciting and unlimited opportunities to plan before implementation. As is the case with 2nd generation Korean new towns, the following should be incorporated at the planning stage itself:
    - More than 85% open areas with extensive development of parks, walking and jogging tracks, bicycle tracks and green common areas including natural and artificial water bodies (In South Korea, even in Industrial New Towns, open spaces are more than 60%). Conveniently located schools, hospitals and shopping complexes
    - Underground power cables, telecom optical fibres, water supply pipelines, waste collection networks, recycling plants and rain water harvesting
    - A sufficient capacity power plant outside the city
    - Aesthetically pleasing wide roads in a grid pattern, transport projects to provide connectivity to nearest metro/large cities
    - Intensive use of technology– interlinking all services, WiFi zones, Automated disaster control measures (fire, earthquakes etc.), U-policing, U-traffic and U-parking etc., smart homes with pressure sensitive floors for elderly people (to detect fall and

automatic communication to emergency services), common ID card for all activities (shopping, subway, public services) etc.

- Most new residential cities can be conveniently developed by inviting two or three large employers who should be encouraged to set up their units (non-industrial) and then move their employees which would form the core around which future residents would settle. The new cities should also be compact cities where the average commutation time from office to residence should not be more than 20 minutes.

Conclusion

Development of new towns and cities has become an urgent imperative in wake of the rapid urbanization that India is witnessing. In this exercise, much can be learnt from the Republic of South Korea, which through advanced planning and innovative use of technology, has been able to develop such new centres and provide high standards of urban amenities to its residents inspite of being one of the most urbanized nations of the world with a high density of population and low availability of land. For ensuring social inclusivity, economic sustainability and providing the initial capital resources, the National Government will have to take the lead in setting up such new centres.

References

1. *New Towns: Antiquity to Present*, Ervin Y. Galantay (1975)
2. *The World Factbook 2012* (Published by CIA – Central Intelligence Agency) (2012)
3. *Korean Version of New Town Development*, Bum Hyun Lee, Korea Research Institute for Human Settlements, Republic of South Korea (2012)
4. http://en.wikipedia.org/wiki/Ubiquitous_city
5. *Provisional Population Totals, Census of India 2011*, Office of Registrar General of India (2011)
6. *Urban India 2011: Evidence*, Indian Institute for Human Settlements (2011)
7. *Issues for Approach to the 12th Five Year Plan*, Govt. of India, Planning Commission – (21st April 2011)
8. *Trends and Patterns of Urbanization and Their Economic Implications*, India Infrastructure Report 2006, Amitabh Kundu (2006)
9. *Think Big About India's Urbanization*, Atanu Dey (2007)

10. *New Towns in India*, K. C. Sivaramakrishnan, Homi Bhabha Fellowship Award Project, IIM Kolkata (1976-77)
11. *Global Construction 2020*, Global Construction Perspectives and Oxford Economics (March 2011)

** Census of India defines Class I City as one having a population of more than 1,00,000*

***Urban population comprises of all individuals living in Urban Areas which comprise of two categories– (i) Statutory Town– All places with a municipality, corporation, cantonment board or notified town area committee etc and (ii) Census Town– All places with a minimum population of 5,000 with minimum density of 400 persons/sq. km and atleast 75% male main workers engaged in non-agricultural activities.*

 # In the paper, 'South Korea' and 'Korea' have been used inter-changeably

Korea Paper On Universal Health Coverage

Mandeep Kaur*

Introduction

India today stands at the cusp of a revolution in healthcare delivery as rising expectations of the public, political commitment, new emerging models in healthcare delivery and the power of technology; present India with an opportunity to leapfrog the inefficient systems of the developed world and implement a system of healthcare delivery that optimizes the tradeoff between:

- Access
- Efficiency
- Economy

Implementing such a system will require government policies and initiatives that align and interlink incentives across the different players in the system viz. Payer, Provider and Public; in a manner that they serve as check on each other.

This paper attempts to analyze the unique aspects of health care system of Republic of Korea vis a vis issues and problems of India's healthcare sector in the context of achieving the overall objective of Universal Health Coverage. Finally the paper prescribes a set of policy prescriptions and instruments required to implement a new system of healthcare delivery. The four legs on which such a system will rest are:

- Government subsidized insurance schemes for the entire population
- Strengthening of public health care delivery system in terms of
    - Building up on the achievements of NRHM

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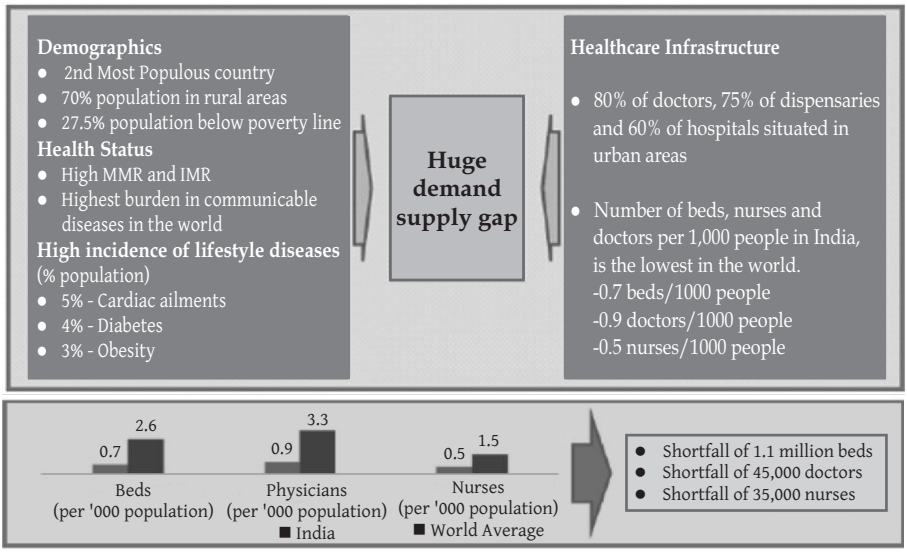
    - Rationalization of norms of health education to ensure adequate availability
    - Devising a system of continuous education
- Public Private Participation in Healthcare delivery services
    - PPP schemes to monetize the already created Healthcare infrastructure, especially in rural and semi urban cities
    - Fees received by the Govt on monetizing Healthcare infrastructure to support the Govt subsidized insurance schemes
    - Price control on Healthcare services maintained through
        - Govt's role as a Payer through the subsidized Insurance schemes
        - Competition amongst multiple players
- Information Technology enabled Information and Monitoring System
    - Service quality monitored through citizens groups and Healthcare IT system
    - Design of Metadata standards to lower cost of IT and facilitate information flow
    - Build up of a database on Healthcare incidence amongst Indian populations to help in the better estimation of Healthcare Insurance costs

The four legs need not be implemented simultaneously and uniformly across the country, but the system can still function, if implemented in the order described above provided the Govt supports the inefficiencies (directly or indirectly) as the system is slowly implemented.

Healthcare in India

According to UNDP data, India is among the top 10 countries in terms of GDP growth. However, India ranks very poorly in terms of Healthcare infrastructure, Healthcare investment and Healthcare outcome when compared with the world average and most other countries. A snapshot of the same is captured in the graph below:



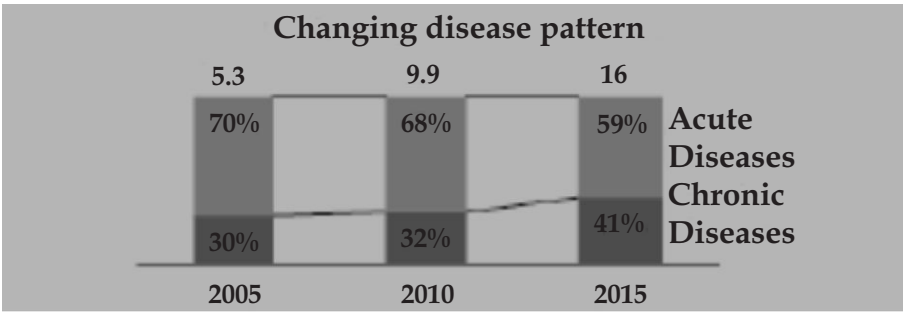
Though, India has made considerable progress in the health sector in the past six decades, but major impetus was given with the launch of NRHM in 2005 with the objective of strengthening the system of primary health care in the public sector by drastic increase of health care funding by Rs. 64000 cr during 2004-5 to 2010-11. Massive investments were made in creation of infrastructure and increase the availability of manpower in all the high focus states, till the village level. For the first time, focus was shifted from supply to demand side and great flexibility was given to states to design their own plans according to their own health priorities.

As a result, our health indicators in terms of IMR, MMR, U5MR, TFR have improved considerably. Despite good progress, inequalities exist in terms of availability and affordability of health care. India, which is home to one third of total world's poor accounts for poor health outcomes too, such as:

Sr no.	Health indicators	Status
1.	IMR	50/1000 as against MDG goal of 26.7
2.	U5MR	58/1000 as against MDG Goal OF 42
3.	MMR	212/100000 as against MDG goal of 100/100000
4.	Life expectancy	67 in 2010 as against 55.5 in 1985, but far below international standards
5.	TFR	2.5 as against goal of 2.1 in NPP2000
6.	Sex ratio	940 in 2011 as against 933 in 2001

Changing health priorities

India has to strengthen its public health delivery system to realize its demographic dividend, which has been achieved due to decline in fertility and increase in life expectancy thus reducing dependency ratio. This if harnessed now, will be the fastest engine for economic growth. India also needs to change its focus because of the change in the disease patterns.



Post 1990 has seen rapid growth in the private sector with government relaxed policies, incentives and reduced drug price controls, which has given added opportunity to the government to tap this potential in the form of PPPs, outsourcing etc.

Overview of Healthcare Systems in Republic of Korea

Republic of Korea in 1976 started its Medical Aid programme for persons below poverty line. Simultaneously, through health insurance law, national health insurance (NHI) was introduced. It achieved UHC in 12 years with increase of total health expenditure as a % of GDP from 3.5% in 1985 to 6.5% in 2007. While MAP is aimed at assisting 3.4% of population as defined by National Basic Livelihood Security Act, selected through annual income/ household survey according to criteria set by MOHW. On the other hand, NHI, covering 98.16% of population is administered by MOHW through NHIC and health insurance review agency. 20% of premium is subsidized by the government, while rest 80% is shared equally by employer and employee and for self employed persons, entirely by them. Scheme provides coverage for medical examination, drugs, surgery, ambulance and checkups. NHI started referral system to discourage wasteful health expenditure incurred by the citizens by directly going to the expensive big hospital.

Korea's health care delivery system is largely controlled by private sector with 95.45% of medical facilities in private sector. Almost 80% of population

stay in urban areas 96% of doctors and 92% of hospital beds are concentrated in urban areas.

Oriental system of medicine is an integral part of health care delivery system in ROK with 14816 (12.1%) of oriental doctors and 11480 (24.8%) of oriental medical institutes functioning parallelly with the modern system of medicine.

Despite, such an unprecedented success in implementing such a massive UHC programme in such a short span of time, there are some snags in the Korean system of UHC also, like rising insurance bills, more expected rise in fiscal liability due to aging population due to high life expectancy rising private out of pocket expenditure which account for 35% of total health expenditure. These weaknesses need to be analysed in the context of selection of health financing model in India.

The Opportunity for a Paradigm shift in the Healthcare delivery system in India

Prime minister in his address on 15th august, 2011 declared that health will be given the top most priority in the 12th five year plan. Therefore we are expecting a massive hike in the plan allocation to health sector this time ranging between 2-3% of GDP at least.

Though NRHM has set the ground by provision of basic health care infrastructure and manpower till Sub centre level and by integration of all disease control and family welfare programmes under one umbrella; a lot needs to be done for providing UHC in 29 different states, which have their own developmental priorities.

Considering the experiences of Korea, following policy alternatives may be considered:

- **Govt supported Health Insurance schemes**

  India has a multitude of insurance schemes both at the centre and state level as well as in the private sector. Besides ESIS AND CGHS schemes, few private players are also there, covering only small urban sector. These insurance packages suffered from the same limitations as are seen in the American model. Till 2007, these three schemes covered 75 million persons. Post 2007, various schemes like RSBY at national level and Rajiv Gandhi Arogyashri Scheme, Kalaignar and Yashaswini were introduced

in Andhra Pradesh, Tamil Nadu and Karnataka respectively, which increased the coverage to 247 million persons in just 3 years.

There are certain weaknesses like leakages, inflated hospital bills, non utilization of public health care institutions, inadequacy of funds etc. RSBY, which covers 23 states and 80 million persons, claims rates are as high as 27% to 136%. States witnessed high hospitalization rates and insurers made losses.

Need is to rationalize these schemes by capitalizing their strengths and devising ways to plug the leakages, based on some uniform and standardized parameters with suitable state wise adaptations, with the single objective of providing UHC to all the citizens in all primary, secondary and tertiary sector.

To achieve this objective, some financial mechanism needs to be put in place keeping in mind demographic transition and health care cost inflation. Though major thrust is on tax based funding from the central government, but it is important that states' funding should not be cut due to increased allocations from the central sector.

Coverage needs to be not only for inpatient and outpatient services, but also for the drugs cost, which account for 74% of total out of pocket expenses. It is pertinent to control drug prices by putting in place a suitable drug pricing policy- most importantly for essential drugs.

Need is to introduce competition amongst the private players, devise some incentive based system for the doctors for the treatment of patients in the public hospitals.

- **Strengthening of public health care delivery system**

  Though private health sector has grown considerably in the recent past, there is an urgent need to further strengthen public health care delivery system. In the 12th plan, we need to take forward the agenda of NRHM.

  To bring health care to community level, encouraging participation of PRIs, NGOs, civil society organizations in health care delivery will ensure greater accountability in the system and will bring public awareness and mobilize public support.

- **Public Private Partnership in Healthcare delivery services**

  India has recently declared its PPP policy. Though, over the past 2

decades, a number of sporadic PPP initiatives have been taken in the health sector. A uniform and consistent policy in this direction will attract massive private investment in this sector. A transparent and credible mechanism needs to be put in place, which is profitable for private sector and dependable for the government and society. Need is to introduce competition amongst the private players and monetize the benefits in terms of cost cutting, effective service delivery and accountability.

Various areas, where PPPs have been attempted are Public health insurance, Blood banks, ambulance services, outsourcing of diagnostic services. We may tap other areas also, where capacity of public delivery system is limited like, OPD services, non clinical services, telemedicine, mobile medical units etc.

Need is to introduce strong monitoring – both IT and community based, to ensure good quality services and prevent undue enrichment of the private sector at the cost of public welfare.

- **Information Technology enabled Information and Monitoring System**

  A robust HMIS is essential for

  - Monitoring service quality
  - Prevent leakages from the system
  - Build up of a database on Healthcare incidence amongst Indian populations to help in the better estimation of Healthcare Insurance costs

There is an urgent need to develop a strong health MIS at primary level for accurate and precise health profiling of every citizen. Though HMIS under NRHM and MCTS have tried to address these issues, but still require proper implementation. The country also needs to design Healthcare metadata standards to lower cost of IT and facilitate information flow. Integration of RSBY and AADHAAR data with HMIS data under NRHM may help in disease profiling of every individual.

Conclusion

We have achieved a lot in the past decade in reforming health sector, both in terms of regulation and financing, but attempt to achieve uniformity

without giving attention to the socio-cultural-linguistic-political-developmental diversity of various states has always led to failure of the policies at the execution level. We must draw lessons from Korea's experience in achieving UHC, but modify them to the Indian conditions. We must also learn from and adopt best practices from around the world to achieve the objective of UHC. Only the health and the development of India's large human capital pool will ensure that India occupies its rightful place as one of the leading countries of the world.

Abbreviations

ROK	Republic of Korea
UHC	Universal health coverage
NHRM	National Rural Health Mission
MCTS	Mother and child tracking system
RSBY	Rashtriya Swasthya Bima Yojana
PPP	Public Private Participation
UIDAI	Unique Identification Authority of India
MAP	Medical Aid Programme
MOHW	Ministry of Health & Social Welfare
NHI	National Health Insurance
NHIC	National Health Insurance corporation

Bibliography

High level expert group report on Universal Health coverage for India, instituted by the Planning Commission of India (2011)

India Human Development Report 2011 Towards social inclusion by Institute of Applied Manpower Research, the Planning Commission of India

Report on 'A critical assessment of health insurance models in India, by Public health foundation of India (2010)

An article on Universal health coverage in India- a long and winding road by Gita Sen, Economic and Political weekly issue, volume XLVII No. 8, February 25, 2012

Presentation on 'Lessons from Korea development : The health care reform and social welfare policy made by Mr. Hacheong Yeon on July 25, 2012 at Seoul

Annual report of Ministry of Health & Family welfare

Health Financing Through Social Health Insurance

Ranjana Chopra*

Introduction

The Alma-Ata Declaration (1978) brought about a paradigm shift in the approach towards health sector by bringing into focus primary health care and universal coverage. More than thirty years later, this thinking has come full cycle with the 2010 World Health Report. The report gives a detailed commentary on the reforms in financing of health sector and revisits the concept of universal coverage and access of health care (WHO, 2010).

Universal health coverage is defined as provision of access to health services to all the people without causing them any financial hardship (WHO, 2005). To achieve this, states need to develop mechanisms to reduce the reliance on direct payments at the time of health need, increase the resources in health sector and ensure equitable and optimal utilization of these resources (WHO, 2010). Many models of health sector financing are available and developing countries are experimenting with both demand side and supply side reforms (Bhatia et al, 2004). South Korea embarked upon rapid economic development in the 1960s and 1970s and in this period moved the base of health sector financing from taxation to insurance, in order to achieve universal coverage. The government adopted mandatory social health insurance (SHI) for the workers of large corporations in 1977 and gradually increased its scope to include the self employed by 1989 (Kwon, 2008). The present paper studies the features of Social Health Insurance (SHI) in South Korea, its impact on universal coverage of health services in that country and its applicability in the Indian context.

Social Health Insurance in South Korea

During the period of its economic rejuvenation, Korea also witnessed remarkable progress in health-care services from 1963 to 1998. Infant

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mortality decreased from 43 per 1,000 live births in 1970 to 5 per 1,000 in 1998 and average life expectancy increased from 62.6 years to 72.4 years (Encyclopedia of the Nations, 2011). Total expenditure as percentage of GDP also increased from 2.3 to 6 and per capita expenditure on health from $15 to $870. The main challenges that the country faced in the health sector in the pre-growth period were universal access, equity, efficiency and quality in the delivery of health care services. To meet these challenges, SHI was introduced in Korea in 1977 and in twelve years, by 1989, the entire population was covered by health insurance.

Multiple insurance societies were established primarily to represent three different categories of people: industrial workers, government employees and those who were self-employed (Kwon, 2003). Although the benefit packages were uniform across the schemes, inequity in the amounts to be paid, led to low contributions, high cost of services, inadequate benefits and inefficient payment system. The government tried to remove these weaknesses by merging all the insurance societies into National Health Insurance Corporation (NHIC) in 2000. The establishment of a single payer system brought about horizontal equity in the provision of health care services across different occupational and income groups, reduced the administrative costs of the insurance society and regulated the payment regime (Kwon, 2003).

The most distinctive feature of health insurance in Korea is that it was implemented by the government not as a response to labor demands but as a policy for the appeasement of the people by the dictatorial rule of General Park Chung Hee (Kwon, 1999). Hence, in a span of just 12 years Korea was able to provide insurance cover to the entire population. The strategy has been to first provide access to basic healthcare services to all through insurance and then to gradually enhance the benefits package under it. From the very beginning the scheme has been household based, with each member of the family availing of the benefits subscribed by the head of the household. The benefits package include curative services, biannual health.

Check ups and free vaccinations in public health centers. 90% of the health care services are provided by the private sector and there is no difference between the fee schedules of the public and the private hospitals. The reimbursement is through a regulated fee-for-service system, with no distinction between the public and the private providers.

Impact of SHI in Korea

SHI has been successful in bringing down the out of pocket expenses from 63% (1982) to 38% (2004), thereby ensuring the availability of health services to people without causing them financial distress. A gradual increase in the premium contribution has helped to increase the benefits and also provide financial sustainability to National Health Insurance Corporation (Kwon, 2008). This is in direct contrast to the taxation based financing option which puts a large resource burden on the government for the provision of universal coverage. With the increase in the contribution and the benefits the country has witnessed a growth of 8.9% in the health sector, which is higher than the average of OECD countries. The public expenditure on health through tax support and SHI has increased from 32% (1989) to 53 % (2004). The per capita expenditure on health, as per the latest estimates is $1829 and the total expenditure on health as percentage of GDP is 6.5 (WHO, 2011).

NHIC as a single payer has helped the government to introduce strong regulation of the market, which has led to containment of the costs and better governance of the health services. The issue of equity has also been adequately addressed and as per a study 62.2% of the households pay a lower premium as compared to the premium paid before the merger of the different insurance societies and 32.8% pay a much larger premium (Kwon, 2003). Thus, healthcare services are available to people as per their requirement and payment is as per their capability, thereby elevating the concept of risk-pooling to the national level. There also exists a healthy competition between the service providers, which has led to improved quality in the services and greater efficiency.

A comparison of health sector of Korea in general and health financing in particular with India reveals that health care in India is still largely supply based with provision of universal coverage being its biggest challenge. The next section of the paper deals with India's health financing scenario in detail.

Health financing in India

Total public health expenditure in India is 1.2% of the GDP which constitutes 26.7% of the total expenditure and the per capita expenditure on health is $23, which is among the lowest in the world (Pillscribe, 2011). The Bulk of public expenditure is based on taxation with insurance forming a miniscule proportion. The system, therefore, bears symptoms of a poor resource base

in the form of inadequate facilities, poor accessibility, low quality and demotivated health personnel. Out of the 73.3% private expenditure 80% is out of pocket which is indicative of the fact that health services put a lot of pressure on the household financial resources. In order to shore up the finances in this sector, privatization, public-private partnership programs and user fees were introduced in the 1990s. These, however, could not yield the desired results and in 2005 government adopted the primary healthcare model to provide universal coverage by launching the National Rural Health Mission (MoHFW, 2005). An average allocation of over Rs. 6000 crores has helped to increase the total public expenditure but despite this the gap between the requirement of resources and their availability in health sector is gnawingly large. To fill this gap, government both at the Central and the state levels is considering insurance as an alternative.

Health insurance in India, is presently a mixed bag. There are broadly four categories of insurance schemes. Voluntary insurance schemes in the public sector like Mediclaim, offered by General Insurance Company, Ashadeep and Jan Asha by Life Insurance company and private sector schemes like Bajaj Allianz, ICICI Lombard, etc; employer based schemes provided by Railways, plantations, mining, etc; community insurance schemes like SEWA, Tribhuvandas Foundation, etc and the mandatory schemes for employees in the organized sector like Central Government Health Scheme (CGHS) for the employees of the Central govt, and Employees State Insurance Scheme (ESIS) for the workers of specified establishments. All these schemes together cover only 10% of the population (Rao, 2008).

Government of India launched Rashtriya Swasthya Bima Yojana (RSBY) in 2007 for the Below Poverty Line households in order to increase access to healthcare services. It provides for over 700 in patient services to the insured, his/her spouse and three dependants for a total cost of Rs. 30000 at a nominal registration amount of Rs. 30. With registration, a smart card is issued to the beneficiary and services are provided through empanelled providers. This ensures a cashless transaction and gives the choice of the provider to the insured (RSBY, 2011). State governments have also launched state specific schemes like Arogyasri in Andhra Pradesh and Kalaignar in Tamil Nadu.

Challenges in Insurance sector in India

The most pertinent issue at this stage of discussion is whether India can explore

health insurance as a viable option of health financing like Korea. There are many impediments to adopting of Social Health Insurance in the country. With a per capita income of $1000 and 26% of the population living below the poverty line, collection of premium for providing a health cover is the greatest hurdle. Coupled with this is the low literacy level and awareness differentials between genders and rural and the urban populace. There does not exist any mechanism for collection of contributions from the large scale unorganized sector. The government has also not been able to put into place a strong regulation system, in whose absence the private sector is largely unchecked. Insurance sector itself suffers from adverse selection, high administrative costs and low premium contributions (Mavalankar and Bhat, 2000).

Thus, important learnings can be drawn from the Korea health insurance experience and insurance sector in India streamlined to provide the much wanted resources in the health sector. In view of the failure of user fees and privatization initiatives and primary

Healthcare program like NRHM in bringing about a substantial increase in the resources in the health sector, social health insurance is worth exploring as a financing strategy.

Conclusion

With a country as diverse as India, it may not be feasible to have a Centralized corporation or a single payer policy. Decentralization should take place up to the state levels but within a state there needs to be a single payer/agency so as to provide equity, both horizontal and vertical, in benefits and premium contributions. Like Korea, in order to attain universal coverage, in India, too, the strategy should be to first extend the insurance cover to the entire population for access to basic services and then incrementally add the benefits as the scheme stabilizes. However, different contribution norms but with uniform benefits would need to be worked out.

Considering the fact that presently private sector is providing 50% of the in patient and 60% of the out patient services, this sector cannot be ignored and should be treated on an equal footing with the public sector. This would ensure an optimal utilization of all the existing resources. As in Korea, the health insurance agency at the state level should act as a regulator and not as the provider of services. It is imperative to establish a strong mechanism for regulation and oversight of the health care services. This would improve the

quality of services and introduce efficiency through a healthy competition. Given the demographic and sociological heterogeneity in the country, it is also important to set up mechanisms for collection of epidemiological data, preparation of standard treatment protocols and costing norms to determine the premium levels. Capacity building of health personnel is another vital component of building a successful insurance program.

Although in Korea SHI is the single largest contributor of health financing, government continues to provide support to the health sector through taxation. In India, too, social health insurance should augment the existing financial resources and support through taxation needs to continue at a much larger scale than Korea. Hence, the policy makers should look at a taxation cum social health insurance model for channelizing maximum resources into the health sector in the country.

References

Bhatia, M, A C Gorter, C A K Yesudian, R Durvasula, K R Thankappan, A McGuire and E Mossialos (2004): ***'Demand Side Financing for Reproductive and Child Health in India'***, report submitted to the Institutional Cooperation Component of the European Commission and the Ministry of Family Welfare, Government of India.

Encyclopedia of the Nations (2011) Retrieved on 19/05/11 from http://www.nationsencyclopedia.com/economies/Asia-and-the-Pacific/Korea-South-POVERTY-AND-WEALTH.html.

Kwon, S. (1999) ***The welfare state in Korea: the politics of legitimization.*** New York: St. Martins Press.

Kwon, S. (2003) Healthcare financing reform and the new single payer system in the republic of Korea: Social solidarity or efficiency? ***International Social Security Review***, Vol. 56, 1/2003.

Kwon, S. (2008) Thirty years of national health insurance in Korea: lessons for achieving universal health care coverage. ***Health Policy and Planning*** 2009; 24:63-71.

Mavalankar, D. and Bhat, R. (2000) ***Health insurance in India: Opportunities, challenges and concerns***. Retrieved on 23/05/11 from http://www.iimahd.ernet.in/ "dileep / PDF %20Files/ lnsurance.pdf

Ministry of Health and Family Welfare (MoHFW). (2005). ***National Rural Health Mission: Framework for implementation***. Government of India. Retreived

on 22/05/11 from http://mohfw.nic.in/ NRHM/Documents/NRHM Framework Latest.pdf.

Pillscribe (2011) Retrieved on 22/05/11 from http:// www. dancewithshadows.com/ pillscribe/ healthcare-spend-lowest-in-india-0-36-of-gdp/.

Rao, K. S. (2008) Retrieved on 22/05/11 from http://www.whoindia.ore/ LinkFiles/ Commision_ on_Macroeconomic_and_Health_Health_insurance_in_lndia.pdf.

RSBY (2011) Retrieved on 22/05/11 from http://rsby.in/.

WHO (2005). Sustainable health financing, universal coverage and social health insurance. ***Resolution WHA58.33, Fifty-eighth World Health Assembly, Geneva, 16-25 May 2005***. Retrieved on 18.05.11 from http:// apps.who.int/ gb/ ebwha/pdf files/ WHA58/ WHA58_33-en.pdf.

WHO (2010). ***Health systems financing: path to universal coverage***.

Geneva: WHO Press. WHO (2011) Retrieved on 19/05/11 from http:// www.who.int/ countries/ kor/ en/