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“It turns out that advancing equal opportunity and economic empowerment is both morally right and good economics, because discrimination, poverty, and ignorance restrict growth, while investments in education, infrastructure and scientific and technological research increase it, creating more good jobs and new wealth for all of us.”

- William J. Clinton

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Lex Revolution

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Lex Revolution welcomes and encourages scholarly unpublished papers on various fields of Law, Human Rights and Social Science from students, teachers, scholars and professionals. The Journal invites the submission of papers that meet the general criteria of significance and academic brilliance. Authors are requested to emphasize on novel theoretical standard and downtrodden concerns of the mentioned areas against the backdrop of proper objectification of suitable primary materials and documents. The papers must not be published in parts or whole or accepted for publication anywhere else.

OBJECTIVES:

- + To develop and promote academic research activities on various contemporary socio-legal issues and trends in law,
- + To provide a platform to discuss the problems related to socio-legal and research issues.

The most valuable and suggestive comments of all the readers are always awaited and welcomed in order to achieve the ultimate goal. We are looking forward for your contributions. All communications shall be made only in electronic form e-mailed to: **EDITOR(DOT)LEXREVOLUTION(AT)GMAIL(DOT)COM**. The submission guidelines are available at website.

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MESSAGE

It is with great pleasure we announce the release of Volume IV Issue-4 (2018) of ***Lex Revolution*** ISSN 2394-997X as an intellectual platform for contemporary issues pertaining to various fields of Law, Human Rights and Social Science. Research and dialogue is the sine qua non for the development of any legal system. Our goal is to provide scholars worldwide with comparative papers on recent legal developments on the international level. The journal focuses on education, research and existing legal concerns with an editorial board comprising of academicians, professionals, researchers, advocates and students.

We owe our sincere gratitude to legal luminaries Prof. Gopal Krishna Chandani, Prof. S. K. Gaur & Sr. Advocate Mr. K. N. Chaubey for their valuable guidance and motivation for making this journal a reality. We thank guest editors of this special edition Maj. Gen. Praveen Kumar Sharma (Retd.) and Mr. Pranshu Pathak for their kind support and guidance. We would like to acknowledge the generosity of AdvocateKhoj who have been the continuous platform for us encouraging various forms of legal dialogue with our readers and contributors.

Finally, we would like to thank all prominent members of our Editorial Board for joining us in this new fascinating and promising academic voyage.

We are indebted to the various Contributors, teachers and Research scholars whose views and opinions have been incorporated in the text.

- **Editorial Board**

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INFRASTRUCTURE, GROWTH AND DEVELOPMENT IN INDIA: LEGAL DIMENSIONS OF INFRASTRUCTURE

Maj. Gen. P. K. Sharma (Rtd.) & Govind Kumar Saxena***

Abstract

Good physical and social infrastructure facilities are extremely crucial for the rapid growth and development of two essential aspects of a country, i.e. economy and living conditions of the citizens in a country. It also reduces poverty and it's responsible for creating several jobs every year. Therefore, this article focuses on the role of the infrastructure sector in the development of a developing country like India. We will also get an insight into the current legal framework of the various sub-sectors of the infrastructure sector. Moreover, we will look into the current complications and challenges in the infrastructure sector and how it can be solved. The main focus of this article is the legal framework under which each infrastructure sector works and operates. Discussion on the current changes in these frameworks is also mentioned briefly in this article. This article also highlights how and why India lags behind other developing countries in terms of infrastructure. Given the urgency for the rapid growth and development of our physical and social infrastructure, this article tries to highlight and identify the key components and challenges in the infrastructure development. Some possible ways of overcoming these challenges are also mentioned in this article. Before we look into the legal framework and dimension of each infrastructure sector, it's essential to understand the current scenario in that sector, the complication in that particular sector, and what improvements are required. All of these issues are discussed in this article and several statistics, data, and research studies have been quoted to support the discussion and findings of this article. Therefore, it's a comprehensive article on the Infrastructure sector in India.

Keywords: *Infrastructure, Growth, Development, Education, Health, Power, Road, Railway, Airport, Indian Economy, etc.*

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INTRODUCTION

A country's position in terms of human and economic development is closely related to its achievements in the social and physical infrastructure. Physical infrastructure is an essential determinant of domestic production and social infrastructure is vital for economic as well as human development as it gives rise to better skilled, healthier, and educated citizens. Given the importance of infrastructure in the economy, we will look into the development and growth of both physical and social infrastructure in India. A proper comparison between India and other emerging countries can determine whether the growth pace of India's economy or infrastructure is adequate or not. We will also look into the challenges that haunt the growth of infrastructure in various sectors. Some possible ways of overcoming these challenges must be debated and implemented at the government level to get maximum benefit from infrastructure programs and policies. There have been several improvements in the last few decades in the infrastructure sector.

In 2012, India ranked 89th in terms of basic infrastructure as per the Global Competitive Index Report 2011-12. By 2018, it scored the 66th position in infrastructure as per the Global Competitive Index Report 2017-18. India has seen a gradual change in its infrastructure in the last decade and a massive funding program to bankroll a new infrastructure programme is under process too. Even though India has shown a great improvement in the last few years, more initiative is required to fast-track the country's development pace and speed. In short, major improvements in the social and physical infrastructure are the need of the hour. These improvements can be made to the legal framework and government policies of each infrastructure sector. In this article, we will look at both of them.

INFRASTRUCTURE SECTOR IN INDIA

The term 'Infrastructure' is used to describe the basic physical systems of a nation or business; this includes communication, transportation, sewage, water, electric systems, etc. All of these systems tend to be a very high-cost investment. Infrastructure is extremely vital for any country's economic development and growth. For infrastructure improvements, certain projects are funded privately or publicly. There are several types of infrastructure and some of them are soft infrastructure, hard infrastructure, and critical infrastructure. Examples of soft infrastructure are healthcare system, education systems, governmental systems, etc. Examples of hard infrastructure are highways, bridges, roads, etc. At last, examples of critical infrastructure are telecommunication, agriculture, public health, etc. There is no doubt about the fact that Infrastructure is a key component and driver of the overall development of a country and its economy. Major infrastructure sectors are power, dams, bridges, urban infrastructure, communication, etc.

Infrastructure is the basic building block that helps our economy to function efficiently. To identify any infrastructure sector, we must keep these six characteristics in mind. These characteristics are indicated by Rangarajan Commission. The characteristics are:

- Non-tradability of output
- Bestowing externalities on society

- Non-rival-ness
- Possibility of price exclusion
- Natural monopoly
- High-sunk costs

The Rangarajan Commission recommended inclusion of railway, roads, bridges, electricity, telecommunication network, crude oil, ports, sanitation, and several other infrastructure sectors. They also published a “the India Infrastructure Report” which included telecom, water supply, gas, electricity, roads, railways, etc.

Sectors such as oil/gas production, telecommunications, roads, ports, civil aviation, urban services, power, railways, mining sectors, and posts as infrastructure. Similarly, the Economic Survey also considers all of these sectors as the infrastructure of a country. In India, Infrastructure sector is highly responsible for propelling India’s developments. It enjoys the intense focus of the Indian Government so that new policies can be initiated to ensure the time-bound creation of the first-class infrastructure in India. India jumped 19 places in World Bank’s Logistics Performance Index 2016 and it ranked at the 35th position among 160 countries which shows that India is capable of doing great work in the development of infrastructure sector.

According to the Department of Industrial Policy and Promotion (DIPP), India received US\$ 24.67 billion from 2000 to 2017 as Foreign Direct Investment in Construction Development sector which includes housing, townships, infrastructure, construction development projects, etc. By 2020, the logistics sector in India is expected to reach US\$ 215 billion from US\$ 160 billion in 2017. India needs more investments by 2020 in the infrastructure sector to have sustainable development. Approximately US\$ 778 billion is required in the coming two years. Fortunately, India is witnessing significant interest from the international community and investors in the infrastructure sector currently. Some key investments in 2018 that has changed the spectrum of India’s infrastructure are mentioned below.

EDUCATION, HEALTH & SOCIAL INFRASTRUCTURE

To promote improved and better utilization of human resources and physical infrastructure, social infrastructures like health and education are essential in any country. For India, improving human capital is the need of the hour. To sustain a service-led growth, our country needs skilled manpower. India needs a proper education system that gives proper training for the current world scenario. A strong educational infrastructure can help India keep up the pace in terms of economy and quality manpower. Education and health are key indicators in the Human Development Index (HDI) which shows that it accelerates economic growth of a country. Also, India’s healthcare is inadequate as per the requirements of the country. There have been some improvements in the last decade still a lot needs to be done. Public health providers must be encouraged and more investments in this sector can aid better and healthier manpower.

PHYSICAL INFRASTRUCTURE

For any country to maintain a growth momentum, it's essential to improve and strengthen the infrastructure facilities of the country. The performance of physical infrastructure in the last decade in the Indian economy has been uneven. If compared to the world standards, India's infrastructure is of low quality. Without a doubt, India's rate of economic growth cannot be sustained if there isn't any increase in the pace and development of its physical infrastructure. Several infrastructure sectors like electricity, roads, information and communication technology must be improved to sustain the current economic position.

GROWTH OF INFRASTRUCTURE SECTOR IN THE LAST DECADE

The infrastructure sector has played a significant role in the overall development process of India's economy. In the last decade, this sector witnessed significant growth and increased investments. The infrastructure investment has been increased from 23% to 32.5% share of India's total expenditure by 2015. Even, the union budget 2016-17 also laid considerable emphasis on spending more on infrastructure to achieve double growth by the end of the year. In 2016, India got 35th rank among 160 countries in World Bank's Logistics Performance Index (LPI) that has 6 indicators which include trade infrastructure, timeliness of shipments, logistics service, etc. In the union budget of 2017-18, the government allocated almost US\$ 62 billion to the infrastructure sector as they recognized the immense potential of this sector.

KEY INITIATIVES TO DEVELOP INFRASTRUCTURE IN INDIA BY THE GOVERNMENT

The Government of India along with several investors from India and abroad formed National Investment and Infrastructure Fund (NIIF) in 2016. With the objective to draw and attract more investments in the infrastructure sector, NIIF aims to create value for investors seeking investments in the infrastructure sector of India. The government is also reviewing ways to introduce Public Private Partnership (PPP) in infrastructure to increase the appeal of this sector to the domestic and global investors. In August 2017, the government of India also approved the Metro Rail Policy which makes PPP mandatory for availing financial assistance for any metro project. It opens doors for private investors across the metro sector.

A new and innovative model is also introduced by the government to boost growth in the infrastructure sector. Hybrid Annuity Model (HAM), Regional Connectivity Scheme (TRCS), Toll Operate Transfer (TOT), and many other models have been introduced in the infrastructure sector to contribute to its growth. The Real Estate Regulatory Act is another initiative by Real Estate Investment Trusts (REITs) to create affordable housing across the country. This move will definitely attract more investors and growth will be seen shortly after its implemented. Some other initiatives by the Government of India are improving the regulatory environment, faster clearances of projects, long-term infrastructure bonds to raise funds, greater infusion of capital, etc. Confederation of Indian Industry (CII) aims at promoting the Indian Infrastructure sector and it's supported by the government. With adequate and appropriate policies in place and correct implementation can propel the growth of our economy and it can become an engine of growth in India's economy.

CHALLENGES IN THE DEVELOPMENT OF INFRASTRUCTURE IN INDIA

- *Land Acquisition:* It is the single largest roadblock in the development of Indian Infrastructure. Several projects are stalled or delayed because of it. There could be several reasons for the delay in land acquisition which includes resistance from farmers and landowners, price difference, property disputes, etc.
- *Delay in environmental clearance and other regulatory:* Various approvals are required throughout the project cycle and there are substantial delays in this process. Approvals from the multi-layer department can be more time-consuming which makes the process longer. Better governance can help in mitigating long delays in project approvals.
- *Private Player's limitation:* There is a lack of private players in the infrastructure sector too. More private sector investors must come forward to invest more in such projects. There is a need to speed up the ongoing efforts by the government to attract foreign investors and developers to invest in our infrastructure sector.
- *Funding Constraints:* Funding is a big roadblock in the proper implementation of infrastructure projects. Capital-intensive projects make it more difficult to get adequate funds. More reliance on the private sectors can be seen these days.

CHALLENGES IN THE HEALTH SECTOR IN INDIA

- The public expenditure is low in the health sector. More investment is required,
- Increasing privatization in the health sector and
- Poor institutional structure

CHALLENGES IN THE EDUCATION SECTOR IN INDIA

- Limited investment,
- Need to make elementary educational more universal,
- Education quality is low,
- Less focus on vocational education and
- Implementation of schemes and policies are not adequate.

LEGAL DIMENSIONS

The legal framework of the infrastructure sector has witnessed several major reforms which aim to achieve consistent and planned economic development. A gradual shift from a controlled market economy to an open market economy can be seen. Foreign investors and private investors have taken an imminent role in its development too. For economic liberation and revolutionary development of the countries, infrastructure sector plays a pivotal role. The government takes assertive steps to achieve the best results from the existing resources. In this section of the article, we will focus on some of the major questions that arise in the legal framework of infrastructure in India. We will also discuss the recent trends, innovations, and concerns along with practical solutions that our country can adapt to produce better results in terms of the development of infrastructure which will be a booster for our country's economic position.

INFRASTRUCTURE DEVELOPMENT AND LAND ACQUISITION

Land acquisition refers to the process used by the Union or State government to acquire private land for the purpose of development like industrialization, infrastructural facilities, urbanization, etc. In return, the government provides compensation to the landowners and rehabilitation or resettlement is also offered to them. In other words, it is the process by which the government acquires private property for public purpose irrespective of the consent of the existing owners of the property. Land purchase and land acquisition are two different things. The law that governs land acquisition in India is the Right to Fair Compensation and Transparency Land Acquisition, Rehabilitation and resettlement act, 2013 (LARR). Before this act, land acquisition in India was governed by the Land Acquisition Act of 1894. A new amendment bill was introduced in 2015 in the Lok Sabha by the Minister of Rural Development, Mr. Birender Singh. This bill amends the Right to the fair acquisition, rehabilitation, and resettlement (Amendment) Ordinance, 2014.

In this bill, several amendments were made by the BJP-led Government that gave the power to the Government of India to acquire land even for private companies. As per the bill, the private companies have to provide rehabilitation and resettlement to the property owners if the land is acquired through private negotiations. There has been a slight improvement in the original act and monetary or non-monetary compensations are made mandatory in the new bill. However, the bill has been criticized by several activists and social workers because of two reasons. First, the compensation amount is not adequate or sufficient in some cases and it is lower than the market price. Second, the affected parties in the land acquisition process are not considered at all in the bill. It will not be wrong to say that the current law on land acquisition is anti-farmer and anti-poor but this has been completely denied by the BJP government.

LEGAL FRAMEWORK OF VARIOUS INFRASTRUCTURE SECTORS

The infrastructure sector consists of various sectors that are governed by a specific act or law or statutes. Statutes encourage private participation and they provide the modes and means of private participation. Private players can participate through grants of licenses or contractual relations. Several legal frameworks of various sub-sectors in the infrastructure sector are mentioned below.

Airport: Airports are governed by the Airports Authority of India Act, 1994, Aircraft Rules, 1937 and the Aircraft Act, 1934. These regulations allow private players to participate in the infrastructure development of airports in our country. Fiscal incentives are given to private players to encourage more investments in this sector. In India, airports can be owned by the Central/State Governments, Urban Local Bodies, individuals, public sector units, and joint ventures.

Power: The legal framework that governs the power sector has undergone several changes in the last few decades. In 2003, the Electricity Act, 2003 was passed and it replaced the Indian Electricity Act, 1910 and Electricity Regulatory Commission Act, 1998. This act has aided in the rapid development of the electricity industry in India. It promotes competition,

transparent policies, transmission, and trading, less regulatory approvals, uniform licensing, and it also provides a statutory basis for state electricity boards' restructuring. Private participation is welcome and Foreign Direct Investment (FDI) is permitted in several projects like hydroelectric power plants, coal-based thermal power plants, etc. This act also provides incentives and tax exemption to private or foreign investors.

Road: The National Highways Act 1956 and the National Highways Authority of India Act governs the National Highway in India. The National Highways Authority of India manages and maintains the functions related to national highways. Foreign Direct Investment is permitted in the maintenance and construction of highways, roads, toll roads, ropeways, rail beds, pipelines, etc. Several fiscal incentives are given to the investors like tax exemption, duty-free imports, concessions, etc.

Water: The National Water Policy 2002 governs the projects related to water. It encourages private investors in the development, planning, and management of water resources projects. Several massive plans are initiated by the government of India to utilize the large rivers for providing pollution free and less expensive method of transportation.

Railway: Railway sector is covered in the list of those industries that are reserved for the public sector. This sector is exempted from industrial licensing requirements. Several components of railways have been DE licensed in the last few years. FDI is also permitted in the railway sector with sectorial caps.

Port: Major Ports Trusts Act, 1963 governs the ports of India and several amendments have been done to this act since it was enacted. 100% FDI is allowed in the port sector. The government provides several incentives and exemptions to private players.

Several statistics of various projects confirm that the infrastructure sector in India is booming and a phenomenal growth can be seen in the next few decades which make it a good investment sector.

CONCLUSION

In this article, we have discussed the crucial role of infrastructure in the development and growth of a country's economy. As we discussed, the infrastructure sector is crucial for rapid human development, economic growth, poverty reduction, and better living conditions. We also discussed the legal framework and dimensions surrounding each infrastructure sector. This article focuses on the legal dimensions of infrastructure development in India. We have discussed how the current position of infrastructure in India is lacking and what changes are required to fast-pace its growth and development. If proper efforts are made in sectors such as education, health, and physical infrastructure then high rates of economic growth can be achieved in India in terms of economy. Moreover, improvements in the budgetary allocation and governance are required to improve human development and revive the economic growth of India.

This article highlighted the challenges faced by each infrastructure sector in India. In conclusion, we can say that several legal reforms have been made in the past decade to

encourage private partnerships and privatization. However, more steps and reforms are required in each infrastructure sector so that India can grow its economy and be a world power in the coming years. Several statistics and research studies have been quoted in this article to support the argument. Various data show that infrastructure sector plays a huge role in sustaining a country's economy and adequate steps must be taken by the government to sustain the economic growth by encouraging more investment and reforms in the infrastructure sector.

PUBLIC-PRIVATE PARTNERSHIP- THE BACKBONE OF INFRASTRUCTURE

Ashish Bansal & Sharmistha Sharma***

Abstract

Infrastructure is the necessity sector for the development of any economy. The public-private partnerships have engaged as a very feasible, viable, and growing route of creating infrastructure for our country. This paper talks about how public-private partnership has covered their dominant role in building infrastructure of the country. Though public sector will continue to play a major role in building of infrastructure, the PPPs have enabled us to channelize private sector investment in infrastructure. Keeping in mind that our India lies in rural area not in big city. This paper also concern about how PPPs has taken up some big step of infrastructure project like DMRC, PPP AC, IIPDF VGF, IIFCL. During 2007-2012 private sector contributed 36.6% in the overall infrastructure investment leading to infrastructure investment rising from -5% of GDP, during 2002-2007 to -7% of GDP during 2007-2012. This paper also put light on the policy formulation of 1991 on of the India's largest step taken up in infrastructure. This sector is highly responsible for propelling India's overall development and enjoys intense focus from Government and private bonding for initiating policies that would ensure time-bound creation of world class infrastructure in the country. The present article explores the possible reasons for this uneven growth in India to be due to differences in the political will among the national and sub-national governments in promotion of the infrastructure PPP policies. Most probably, PPPs not only in infrastructure but also give its contribution to other sector also like management, proficient risk mitigation, and enhanced technological innovation. This paper also analysis endogenous risk faced by the public and private sector how the will conclude themselves in front of the economic development and the society for which they are working, beside this how they will distribute the profit in practice based on the conclusion of the study.

Keywords: Infrastructure, Management, Development, Public-Private Partnership etc.

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INTRODUCTION

Public-Private Partnership is defined as a legal agreements between public and private-sector entity that offer the delivery of physical infrastructure & services to the society in specific time duration. PPP aims to take advantage to the strength of the public sector through stable governance, citizen's support and those of private sector by their enhanced operational efficiency, innovative technology, managerial effectiveness so as to deliver higher standard of service to the people with better value of money.

Public private partnership is an ancient phenomenon, they were not studied sincerely by scholars until the late 1980s, when they began to be adopted in public administration as well as management in both developing and developed countries. PPP's have been a topic of political controversy and also scholarly debate especially concerning the merits and demerits of PPP's with traditional government run services also the nature of partnerships they bring about.

PPP is a broad term that can be applied to anything from a simple, short term management contract (with or without investment requirements) to a long-term contract that includes funding, planning, building, operation, maintenance and divestiture. PPP arrangements are useful for large projects that require highly-skilled workers and a significant cash outlay to get started. They are also useful in countries that require the state to legally own any infrastructure that serves the public.

BASIS OF PUBLIC PRIVATE PARTNERSHIP

Some of the essential conditions to label a public-private arrangement are conceived in the definition by the National policy on PPP's. Though each PPP contract is a unique one depending on the circumstances of the case, each one of them is based on some integral characteristic common to such contract notwithstanding a few other condition which I also desirable in a good and fair PPP are related to specifications about risk assumption, method of payment, whether the payment would be through cash flows from the public sector based on presentation or whether it would be charged from the consumer utilizing the service, incentive and penalty based structure in the arrangement so as to assure that the private sector is benchmarked against service delivery, re-colonization of minimum technical specification without effecting impossibility of innovation and specified time period for either transfer of the project or its application by the private sector entity.¹

In recent years the concept of PPP is acquiring much more impetus across the country just because it has been able to provide ample blend to the much needs projects which government cannot do only by its own. Public-private partnership can provide solution that can overcome hurdle to development due to a lack of infrastructure. PPPs are not only substantial help to the private sector only rather it allows government to expand the provision of services by using market tools. It can increase the number of services that can be supply

¹ Dr. Vidya Telang & Dr. Vishakha Kutumbale, *Public Private Partnerships In India: An Overview Of Current Scenario*; Available at: <https://www.researchgate.net/publication/281024752>

within a given state budget and, more supreme, it increases their value in terms of quality and performance. The liberal government policy have also helped in conducting the world closer to this country, as a result of these liberal policies, India is becoming a hub of PPP.

The creation of world class infrastructure would require large investments in addressing the deficit in quality and quantity. Therefore, it is necessary to explore the scope for plugging this deficit through Public Private Partnerships (PPPs) in all areas of infrastructure like roads, ports, energy, etc.

MODELS OF PPP's

PPP is model of presuming that public infrastructure and services is governed by government in partnership with private sector. It is long term process arrangement between government and private sector entity for provision of public benefit and services. Public-Private Partnership is an investing model for public infrastructure project such as telecommunications system, Power plant. PPP is a wide term that can be applied to anything from simple, short term management contract (with or without investment require) to a long-term contract that includes funding, planning, building operation, maintenance and divestiture.

PPP infrastructure projects also be taken place or useful for a large projects that require highly-skilled workers and a significant cash outlay to get started. They are also useful in developing counties and undeveloped countries that require the state to legally own any infrastructure that serves the public.

Different models of Public-private partnership funding are characterized by which partner is responsible for owning and maintaining assets at different stages of the project. Here are some examples:-

- ***BOO (Build- Own-Operate):*** It is a project model of Public Private Partnership in which a private organization builds, own and operates some facility or structure with some degree of encouragement from the government. Although the government doesn't provide direct funding in this model, it may offer other financial incentive such as tax-exempt status.
- ***BOOT (Build-Own-Operate-Transfer):*** It's a project in which a private organization conducts a large development project under contract to a public-sector partner, such as a government agency. A BOOT project is often seen as a key way to develop a large public infrastructure project with private funding.
- ***Build Operate and Transfer (BOT):*** This is the simple and conventional PPP model where the private partner is responsible to design, build, operate (during the contracted period) and transfer back the facility to the public sector, Role of the private sector partner is to bring the finance for the project and take the responsibility to construct and maintain it. In return, the public sector will allow it to collect revenue from the users, The national highway projects contracted out by NHAI under PPP mode is a major example for the BOT model.

- *Design-Build (DB)*: The private-sector partner designs and builds the infrastructure to meet the public-sector partner's specifications, often for a fixed price. The private-sector partner assumes all risk.
- *Operation & Maintenance Contract (O&M)*: The private-sector partner, under contract, operates a publicly-owned asset for a specific period of time. The public partner retains ownership of the assets.
- *Design-Build-Finance-Operate (DBFO)*: The private-sector partner designs, finances and constructs a new infrastructure component and operates/maintains it under a long-term lease. The private-sector partner transfers the infrastructure component to the public-sector partner when the lease is up.²
- *Operation License*: The private-sector partner is granted a license or other expression of legal permission to operate a public service, usually for a specified term. (This model is often used in IT projects.)
- *Finance Only*: The private-sector partner, usually a financial services company, funds the infrastructure component and charges the public-sector partner interest for use of the funds.

STATUS OF PPP PROJECTS IN INDIA

In the last one decade, a resource crunch has been faced by the government. The combined deficit of the central and state governments is roughly 10 percent of Gross Domestic Product (GDP). Government borrowing has been capped through the Fiscal Responsibility and Budgetary Management Act. This necessarily limits state participation in infrastructure financing, thus opening the door to innovative approaches, such as PPPs. The number of PPP projects in India has increased from 85 in 2004 to 840 in 2011 to 1339 in 2014 to 1,529 in (worth around Rs.1,048,641.22 Crore) till Oct 15, 2018. India is second only to China in terms of number of PPPs and second only to Brazil in terms of investment in PPPs.

PROBLEMS, CHALLENGES AND RISKS IN PPPs

The PPP sector in India is still new and current. A passage of a minimum time period is imperative to gauge the effects and impact of any economic phenomenon. Only then and then can meaningful conclusions be drawn. As said earlier the public private partnerships in India are only 12 to 15 years old (or new) and a main part of activity on those grounds has actually taken place during the last 7 to 10 years. Apparently the reports and reviews which have come out about the PPP sector in India point towards the conclusive stance taken by the economy towards such partnerships. To harness the private sector investments, the enabling environment generated by the central and the state governments in such projects has generated a very conducive environment for such partnerships. Yet the PPPs have not been an outright success in some instances and cases. The literature and the particular case studies on the subject indicates that most of the problems that have been detected and experienced in

² World Bank

these have emerged along the way and the fact remains that these problems could not be imagined or envisaged by both the parties at the time of entering into the contract. This fact makes it more vulnerable to bottlenecks that PPPs are long term in nature. It is because more the time concerned, larger is the probability of a problem cropping up.

The every formulation of PPP contract is unexampled. No two PPP contracts are the identical. It is thus not that easy to standardize a PPP format. This is due to the fact that the parameters involved in structuring of PPP cannot be the same every time and therefore a PPP can vary on various grounds such as the nature and type of infrastructure demanded, the sector involved, the model followed etc. The stake of the Central and State governments and the revenue, risk and responsibility sharing in the project are circumstantial and are likely to differ from one contract to another. Thus aside from distribution of the construction of the infrastructure by the public and the private sector which can be on financial and technical grounds nothing else can be standardized for such partnerships.

According to a research article ‘How to improve PPP projects in India: learning from the past’, any PPP project has to essentially pass through four vital phases of project preparation, project procurement, project operations and development. Careful handling, planning and clear cut demarcating lines of work are necessary at every stage. The building of contracts can only define the formal mechanism of fulfilling the contract. However it is hard to incorporate solutions, steps and methods to circumstantial issues which may crop up while the project is in process in a PPP contract.

Currently there is no *PPP* regulation in India. Enough thought has probably not been given to this aspect, since the whole concept of public private partnership is quite new in our country. However the National PPP Policy 2011 draft has been put up for more comments and suggestions. The above problem of non-standardization of PPP contracts can to some level be taken care of by developing an independent regulatory PPP body. This may lead to a better and more robust participation by the private sector and also invite more international funding.

With regards to PPP projects, it has been felt that the *tendered projects are often unviable*. Particularly this has been felt in the national highways sub-sector. The unviability arises as result of project planning beyond the scope of the bidders, insufficient viability gap funding and expanded risk to the provider because of certain terms in the concession agreement.

The lack of transparency is one of the most discussed problems related to PPPs. Though a lot of effort has been made to boost transparency during the bidding process and award of contracts, people in general seem to nurse this grouse of non-transparency in PPPs which is certainly not without reason. The whole process of creating a PPP arrangement is very lengthy and ridden with a lot of formalities. There have been many cases where the private party has acquired undue political favours from their public sector counterpart making the entire process seem dubious. The problem of lack of transparency is also extendable to user based projects in which case the complete contract smells of some sort of underhand nexus or collusion among the government and private sector. This is essentially true in case of user charged projects such as road construction. In such projects the toll tax is charged from the users of the road also the public at large is kept in the dark as to the date of commencement of

the charge, the right amount to be charged, date of expiry for such charges, the date of handing over the project to the government etc. This is by reason of no such information is available at the toll tax points. Considering the travellers are more or less in haste and the amount charged is also not unduly large, these problems go unreported and at times conveniently unnoticed. Though the magnitude of the problem is not extremely large, one does feel the pinch of the tax. Thus this kind of a complication is not just restrained to being a PPP contract problem but would also fall in the jurisdiction of the Consumer's Act because the toll tax is ultimately being borne by the user of road services. In particular context of India, this lack of transparency has often culminated into violence in some states like Maharashtra.

A dispute which has come to the forefront is regarding project preparation. Many projects lack technical research and diligent studies. Project plans are of poor quality as well as lack attention to details. This creates complication related to scope changes also variations during project execution. Literally what may appear feasible on the paper in black and blue may practically be ridden with lots of problems at the time of certain launch and advancement of the project. Many a times due to wrong and inaccurate estimations, the project gets delayed causing time and cost overrun. Usually the tasks related to land acquisition and other essential clearances lie with the government. This is because the government as result to its authority as well as position is capable to accomplish these things in better way. On the other hand the technical along with operational part of the project is managed by the private sector. Case studies report that delays are caused mainly because of problems come across in acquiring land as well as making it available to the private sector. This delay result in further time and cost overrun making the project unviable as far as revenue generation is concerned. Land acquisition should be complete before the project is awarded and tendered as per the suggestion by Global best practices. Withal in India figures submit in most of the cases that only 30% of the land is really acquired when the project is awarded. The delay in land acquisition is believed as the only largest factor responsible for dismal faring of PPP projects in some cases also the most notable reasons for this are the dependence on the government authority, the undervaluation of land price as well as ambiguous definition of unencumbered land.

Various other kinds of approvals from External Finance Committee, Public Investment Board and Cabinet Committee for Economic Affairs etc. are also needed for PPPs simultaneously with the above delays. These relate to the ministerial and administrative levels of the government. On the other hand the government agencies in India suffer deeply from the concept of timelessness.

Further no one on an individual basis is ever taken accountable for any lapse. In case of PPPs, effectiveness in performance and sticking to time schedule should be built the joint accountability and responsibility of the government as well as the private sector.

The non-adherence to the moral code of conduct has been encountered as an additional problem. It should be brought to mind all the time that for the public sector creation of infrastructure whether social or economic is a priority for the government with a social

welfare motive also whereas for the private sector it is just another business proposition. It will follow only behind its primary objective of generating returns has been accomplished and it can and never will be the other way round even if the social objective is implied. Problems and bottlenecks are felt at almost every level of PPPs right from conceptualization, planning, execution and implementation to make long things short. Searching solutions to these issues is further a very time consuming process because the sectors involved are themselves characterized by their very divergent objectives of revenue maximization and social benefit. Furthermore vested interests as well as non-compromising attitudes of bureaucrats, local politicians and administrators create more man-made obstacles causing the projects to languish.

It has been lately felt that funding of PPP projects is going to show up as a major issue in the future. Private sector is hugely dependent upon the commercial banks for debt and funding also many of these banks have already come to their sectorial exposure limits. In India the infrastructure project companies are at present in a highly leveraged condition and as such in addition availability of finance would not be simple.

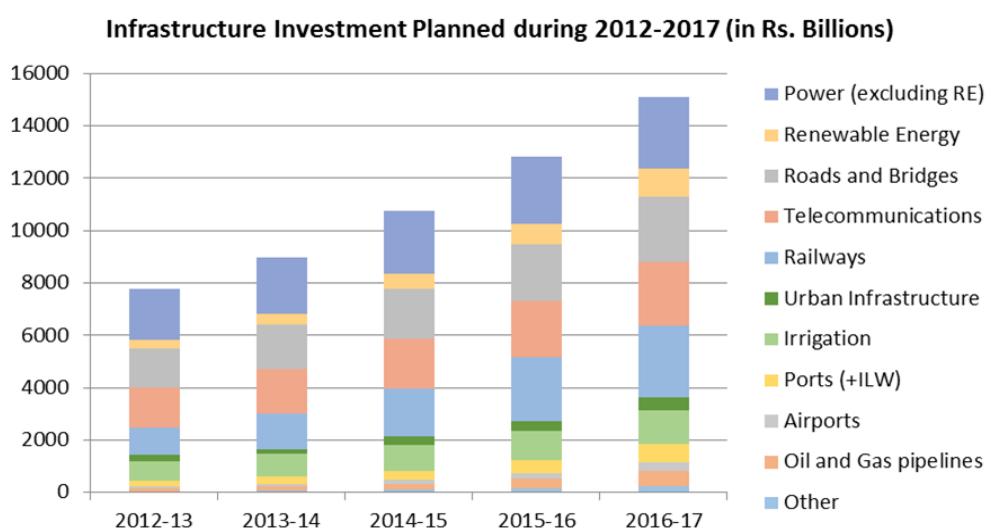


TABLE I.

Year	Commercial lending by Banks in India	Year Financing Amount	(Rs. in billion) Increase % Increase
2006	1128		
2007	1433	305	27.04
2008	2051	618	43.13
2009	2699	648	31.59
2010	3798	1099	40.72
2011	5266	1468	38.65

Self-generated (figures of financing taken from Handbook of Statics, RBI 2010-11)

It can be seen from the above table that there has been a large increase in the funding of infrastructure PPP project India. From 1128 INR billion in 2006 it has risen up to INR 5266 billion in 2011. The average growth during this period is around 35.70% in funding. Most of the financing for infrastructure is in the sectors of telecommunication, power, roads, and

ports. According to RBI Annual Report 2010-2011, the share of infrastructure lending as a percentage of gross bank credit has increased from 2.2% in 2001 to 13.4% in 2011. However with significant number of infrastructure project in the pipeline banks are finding it increasingly difficult to finance such project.

The asset liability mismatch is a further off shoot of the financing problem. This suggests that long duration infrastructure loans need to be financed by short duration deposits. The infra loans have maturity and repayment schedules ranging up to even 15 years although the borrowings and deposits of banks which are accounted to finance the same have much shorter maturities. This hiatus among the two constructs an asset liability mismatch which if left unintended can result in liquidity issues. The above issues related to funding and financing will manifest themselves in the coming years and a fear is disclosed that we may not be able to manage the similar pace of growth in PPP as we have achieved till now.

DRIVING KEY SOCIAL AND ECONOMIC SECTORS THROUGH PUBLIC-PRIVATE PARTNERSHIPS

PPPs have been heavily promoted in key sectors such as education and healthcare with the aim of improving efficiency and innovation in the generation and performance of public services. However, the infrastructure for improvement in these sectors comes from the ICT sector, where many PPPs have been established to respond in faster and more inventive ways to the ever-increasing demands of customers. PPPs in the ICT field are driven primarily by mobile applications and more affordable Internet access. The success of an ICT-centric PPP project depends largely on the establishment of economically viable business models and self-sustaining schemes for the delivery of e-services, because most private participants are interested in PPPs only if there is a possibility of a return on their investment (and the associated risk that is deemed worth taking). However, global initiatives- such as the Digital Opportunity Task Force, the Global Knowledge Partnership, and the World Summit on the Information Society - have increased awareness of the vital role that PPPs play in providing access to ICT for all as an instrument for social, industrial, and economic innovation. Schooling and education is, in general, largely provided and financed by governments,¹⁰ but unmet demand for education coupled with shrinking government budgets requires that in many parts of the world public-sector organizations develop partnerships with the private sector if educational needs are to be met. The main rationale behind these PPPs is that private companies can stimulate equitable access to education and, ideally, can improve learning outcomes. In low-income countries, excess demand for schooling results in private supply when the state cannot afford schooling for all.

WHAT MAKES A PPP SUCCESSFUL?

The introduction of micro insurance PPP can be influenced by many distinctive factors, some of which facilitate the process while others prove to be obstacles. Both types can occur within the PPP collaboration itself and in areas beyond the partnership's immediate influence. The participants discussed a number of factors that can reduce the obstacles and provides support for PPP to evolve in a successful manner. The following factors as mentioned are by no means exhaustive:

- Courage and transparency: While transparency is in the welfare of the public, it can develop a “high risk/low reward” situation for those implementing challenging projects. From a personal and business point of view there are significant risks when implementing such projects as many experience initial setbacks. A considerable amount of courage is required on the part of the management and staff to stick by them. A crucial role is played by Transparency in being able to learn from others and distribute the lessons learnt.
- Involvement of top management and the board: Top-level assistance is essential when implementing innovations, expressly those that might entail potential risks and require deviating from the frequent procedures. Structured dialogue among the implementing units and management has proved to be of great success because it provides timely feedback for corrective action or suggestions for effective as well as efficient delivery.
- Ownership of all stakeholders: In order to magnify ownership, a more bottom up approach should be encouraged to secure the involvement of all the relevant stakeholders. This across the board involvement will decrease the risk of goal deviation and facilitate the channels of dialogue, which are necessary to the success of PPP.
- Independent organizational structures for implementing PPP: Independent agencies, such as the ‘Co-operative Company of Collective Interest’ (SCIC) in France, gives private and public stakeholders a framework for managing PPP, which in turn will increase transparency, trust and control. With regard to the risk of information asymmetry, these agencies are more likely to identify and correct them. This structure should provide PPP stakeholders with enough institutional flexibility to give them the freedom to work within their individual mandate while also serve the common interest.
- In conclusion, the most essential factor is the smooth cooperation among the various partners as well as a common understanding of the objectives, roles and responsibilities.

CONCLUSION

As in India PPP are all new concepts as according to the other countries. All the projects are running under PPP model are based on the concept that the private sector contributes capital and expertise in return for the opportunity to make profits. PPP need time to nurture and grow if they are to become sustainable. PPP work on a large scale involving many organizations including many stake holders this magnitude requires an adequate time for the project to get complete, PPP should have large time bounded so they can go for long run. In the running time Private Partnership of education is effective efforts for government to run the large educational institutes. Over the last 15 to 20 years, however, new forms of private participation should developed in public services and including education institutes and also The Public Private Partnership (PPP) have emerged as a very viable and possibly sustainable

mode of creating the much needed infrastructure for our country. Along with the advantage and disadvantage there are some ups and downs are also suffer in the forms of various bottlenecks and challenges. We should also need to put light on policy formulation by introducing more transparency, development of national sense and rising above vested interest.

REGULATING INFRASTRUCTURE DEVELOPMENT IN INDIA

*Kashish Soni** & *Priyanka Meena***

INTRODUCTION

Adopting safety standard while developing infrastructure is one of the mere element of ensuring a safe built environment. Time-varying factors coupled with geographical consideration take the notion of safety far beyond simply adopting technical standards. For example, every location has different mix of materials that can be used to build infrastructure. Overtime, changes in material science interact with locally available raw materials create new ones.¹

This becomes a problem as the Constitution of India, which details the distribution of legislative powers between the centre, states and local bodies, allows for devolution of urban and town planning to notified towns known in India's municipalities. As a result, census towns are neither responsible for planning their urbanization, nor do they have power to do so. Even from the municipalities and above, different levels of governance are responsible for providing specific types of infrastructure as detailed in the Constitution of India. The quality of this infrastructure and the extent to which it adheres to the adopted standards may vary due to the capacity or lack thereof of the governing body involved.

Further, as India's regulatory framework for infrastructure development safety standards is still evolving, there is systematic consideration that, if addressed appropriately, could also reduce risk. For example, while there is merit in moving towards a performance-based standards regime, prescriptive standard are used when there is lacking competence to convert descriptive requirements into quantitative specifications. As a result, an appropriate balance between the two regulatory frameworks should be considered when developing a regulatory framework for standards, one that encourages compliance and allows for its measurement. Similarly, the question of whether to retrofit existing infrastructure (and to what extent and level of safety) is an important one for India. This paper explores these and several other systematic considerations.

Based on this review, this paper identifies areas for concern while moving forward in India's high-placed urbanization context. Rather than focusing deeply on any one standard, this paper analyses the ecosystem for standard setting in India's infrastructure development from a risk perspective. The rest of this paper is structured as follows:

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¹ Available at: https://www.nipfp.org.in/media/medialibrary/2018/05/WP_230

Section 2 gives an overview of trends in India's infrastructure development and urbanization landscape. Section 3 reviews the legal framework for infrastructure development, as detailed by the Constitution of India. Section 4 explores how infrastructure standards are developed, both internationally and in India. It also details the implementation process for developing infrastructure as per pre-defined standards, and addresses accountability of professionals involved in this process, along with possible incentive mechanism to increase compliance to these standards. Section 5 explores systematic considerations when developing a framework for standards, such as the importance of developing standards for operating and maintaining infrastructure once it's built. Section 6 concludes by highlighting some areas for concern in the current framework.

It is a network of physical facilities and public services and with this social infrastructure is equally important to support it.

- It is an important base for economic development of the country.
- These services include roads, railways, ports, airports, dams, power stations, oil and gas pipelines, telecommunication facilities, the countries educational system including school and colleges, health system including hospitals, sanitary systems, clean drinking water facilities and the monetary system including banks, insurance and other financial institutions.

PRESENT SCENARIO

India at present is at the threshold of becoming a developed country. Its economy has been growing at a high GDP growth of over 8 percent per annum. With the increase in population the demand for goods and services is increasing every year. The number of dwelling units in big and small cities is increasing. There is more demand for power to run home appliances in these as well as existing units. To meet this ever increasing demand we need to build a huge power infrastructure. That is why India has entered into a nuclear deal with America whereby the sole superpower in the world shall provide us with nuclear technology. Many nuclear reactors will be set up in India. The nuclear fuel will be supplied by some of the countries in the Nuclear Suppliers Group (NSG). Nuclear energy will be harnessed to be used for peaceful purposes.

The transportation infrastructure includes roads, vehicles, railways, tracks, trains, ports, airports, ships and vessels. Road transportation is perhaps the most important because the railway tracks cannot be laid everywhere. The roads are the means by which the movement of people and goods from one place to another is ensured. Millions of people move out of their houses every day to reach their places of work, trade or business daily. They not only generate income from working but also fulfill the needs of others. They use roads and vehicles available to them.²

The national highways are mainly used to move from one city to another and for supply of essential goods-food grains and other articles of use from one city to another. Thus, roads are

² Available at: <http://www.shareyouressays.com/-role-of-infrastructure-in-development-in-india/2855>

a key to the success of Public Distribution System. If there is no road transportation, the supply of these goods will not be possible to different cities and towns. The whole economy will collapse.

Railways are another important part of transportation infrastructure. India has a huge railway network with a route length of 63,221 km, a fleet of over 7,800 locomotives, 5,340 passenger service vehicles and nearly 5,000 other coaching vehicles. There are 7,031 stations across the length and breadth of the country. The total network is divided into 16 zones. Crores of passengers travel through railways for the job, work and personal needs every day. Thousands of tons of goods are taken from one place to another. The transportation of heavy goods like steel and raw material like coal cannot be transported by any other mode of transport than the railways. Apart from performing these vital functions for the economy and the country, the railways are a huge source of revenue for the government. It has also given employment to lakhs of employees directly or indirectly.

Airports and civil aviation are also part of the transportation network in the country. Air travel is fast and highly comfortable. It caters to the needs of rich sections of people and the high executives and political delegates whose time is highly precious. It is also used for speedy transportation of goods, particularly the perishable goods which, if sent through road or railway transport will rot in the way.

In India the civil aviation has three main functional divisions-regulatory, infrastructure and operational. On the operational side India Airlines, Alliance Air, private scheduled airlines and non-scheduled operators provide domestic air services while Air India provides international air services. Pawan Hans Helicopters Limited provides helicopter services to 11 and Natural Gas Corporation (ONGC) in its offshore operations to inaccessible areas and difficult terrains. Sahara Airlines and Jet Airways have also been permitted to operate on international sector. In order to help the Indian exporters and make their exports more competitive, the government introduced an ‘open sky policy’ for cargo.

Under this policy, foreign airlines or associations of exporters can bring any freighters to the country for the upliftment of cargo. Charter flights for tourists are also allowed to and from India. Thus, air services infrastructure plays a key role in civil aviation, international flights and cargo transportation. It benefits the economy immensely and earns millions of rupees every year for the country.

India has a coastline of over 7500 km which is serviced by 12 major ports and 186 other ports. The major ports are under the purview of the central government while the minor ports come under the jurisdiction of the respective state governments. The major ports are: Mumbai, Nava Sheva, Kandla, Marmugao, Mangalore, Cochin, on the west coast; Kolkata, Haldia, Paradip, Visakhapatnam, Chennai, Ennore, and Tuticorin on the east coast.

These ports have a capacity of over 450 million tones. The number of cargo vessels handled at these ports is about 16,500 per annum. The cargo handled is liquid cargo, dry cargo and container cargo. In order to improve the efficiency, productivity and quality of services and to bring competitiveness in port services, the government has encouraged private participation

in it in the wake of liberalization and globalization of the economy. The Eleventh Plan outlay for port sector is around Rs.6,500 crore.

If one sector has developed more than any other sector during the last one decade or so, it is the communication sector. It encompasses the postal network, mail system, telecommunications, including telephones, mobile phone services, etc. The postal service is catering to the mailing, telegraphic services which have now been supplemented by courier services. India has a huge infrastructure for postal and telecommunication services whereby letters, parcels and messages are sent to various parts of the country and abroad. Mobile phone services are the buzzword of our society now. Several companies like Bharti Airtel, Reliance Communication, Hutch and Vodafone are flourishing apart from the public sector MTNL.

Infrastructure is the base on which all economic activities of the country depend. The government is spending thousands of crores of rupees every year to create this infrastructure where it does not exist or is not fully functional. It has also established adequate systems for their maintenance and upkeep so that it remains efficient and durable.

GOVERNMENT INITIATIVES

The Government of India is not expected to invest highly in the infrastructure sector, mainly highways, renewable energy and urban transport.

The Government of India is taking every possible initiative to boost the infrastructure sector. Some of the steps taken in the recent past are being discussed hereafter.

- Announcements in Union Budget 2018-19:
 - Massive push to the infrastructure sector by allocating Rs5.97 lakhs crore (US\$ 92.22 billion) for the sector.
 - Railways received the highest ever budgetary allocation of Rs1.48 trillion (US\$ 22.86 billion).
 - Rs16,000 crore (US\$2.47 billion) towards Sahaj Bijli Har Ghar Yojana (Saubhagya) scheme. The scheme aims to achieve universal household electrification in the country.
 - Rs4,200 crore (US\$ 648.75 billion) to increase capacity of Green Energy Corridor Project along with other wind and solar power projects.
 - Allocation of Rs10,000 crore (US\$ 1.55 billion) to boost telecom infrastructure.
- A new committee to lay down standards for metro rail systems was approved in June 2018. As of August 2018, 22 metro rail projects are ongoing or are under construction.

- Rs2.05 lakhs crore (US\$ 31.81 billion) will be invested in the smart cities mission. All 100 cities have been selected as of June 2018.
- The Government of India is working to ensure a good living habitat for the poor in the country and has launched new flagship urban mission, the Pradhan Mantri Awas Yojana (Urban). In May 2018, construction of additional 150,000 affordable houses was sanctioned under Pradhan Mantri Awas Yojana (PMAY), Urban.³

LEGAL FRAMEWORK

The Constitution of India details the distribution of legislative powers between the center and the states. While the Parliament of India has exclusive power to make laws on some items (such as national highways), the legislature of any state can make laws on others (such as water supply). Further, the legislature of a state has power to constitute municipalities and panchayats and may, by law, endow them with certain powers and authority. This section highlights the distribution of legislative powers for infrastructure related items.⁴

Central Level: Items on which the Parliament of India has exclusive power to make laws include:

1. Railways
2. National highways
3. Major ports
4. Airports
5. Telecommunication

Developing infrastructure under these sectors is the responsibility of the Centre, and is administered through statutory bodies or through ministries. For example, the National Highways Authority of India (NHAI) is the nodal agency responsible for developing, maintaining and managing Indian national highways, and was established through the National Highways Authority of India Act, 1988. Similarly, the Airports Authority of India Act, 1994 established the Airports Authority of India (AAI), which is responsible for “establishing or assisting in the establishment of airports”.

Each of these statutory bodies adopts appropriate standards for design and construction of sector-specific infrastructure. These standards are developed by various bodies, some governmental and some private entities. For example, the Indian Road Congress (IRC) is a registered society of highway engineers established for developing and updating standards, codes of practice and guidelines, for the road sector. While this society is not a government entity, NHAI regularly uses IRC standards for construction. In contrast, the Research Design and Standards Organization (RDSO) is a government organization under the Ministry of Railways that develops standards and specifications for materials and products for Indian Railways. The centre may also adopt and apply international standards in some cases (as discussed in section 4).

³ Available at: <https://www.ibef.org/industry/infrastructure-sector-india.aspx>

⁴ Available at: https://www.nipfp.org.in/media/medialibrary/2018/05/WP_230

State Level: Items on which the legislature of any state has power to make laws include:

1. Roads, bridges, ferries, and other means of transportation not under the Centre's jurisdiction
2. Water supplies, drainage and embankments, water storage and water power
3. Land rights, tenures and revenue

Within a state, every metropolitan area is required to have a committee to prepare a draft development plan for the area as a whole. Also, states are responsible for the constitution of municipal corporations and other local authorities for the purpose of local self-government or village administration.

The Constitution of India defines three types of municipalities:

1. Nagar Panchayats for areas in transition from a rural area to urban area
2. Municipal Councils for smaller urban areas
3. Municipal Corporations for larger urban areas.

Establishment of municipalities is done by public notification by the Governor of the state. States may, by law, endow municipalities with the functions and implementation of certain items within their jurisdiction, including:

1. Urban planning including town planning
2. Regulation of land-use and construction of buildings
3. Roads and bridges
4. Water supply for domestic, industrial and commercial purposes
5. Slum improvement and up gradation

Municipal Level: Municipal develop legal tools in the form of "Building Bye-Laws" for structural design and construction (including that of public infrastructure such as roads), to achieve orderly development of an area. These bye-laws are developed while keeping the local geography in mind, such as seismic zones and flooding risk. They incorporate standards developed by the Bureau of Indian Standards (BIS). This is the national standard setting body in India, established under The Bureau of Indian Standards Act, 1986. Some BIS standards are made mandatory through building bye-laws within the jurisdiction of the municipality, though these bye-laws vary with each municipality.

Panchayats Level: Village panchayats are rural local bodies responsible for some of the governance functions in their locality, as defined by Article 243B of the Constitution of India. The states may (by law) endow panchayats with the functions and implementation of:

1. Roads, culverts, bridges, ferries, waterways and other means of transportation
2. Rural electrification, including distribution of electricity
3. Minor irrigation, water management and watershed development
4. Drinking water

For example, The Maharashtra Village Panchayats Act gives a panchayat established under this act responsibility over the "construction, maintenance and repair of public roads, drains,

bunds and bridges: Provided that, if the roads, drains, bunds and bridges vest in any other public authority such works shall not be undertaken without the consent of that authority.⁵

PROBLEMS IN INFRASTRUCTURE DEVELOPMENT

- Urban Infrastructure Problems in India

Urban Infrastructure Problems in India are an age old problems. The infrastructure problems in India mostly took a back-seat in the economic development policy drafts. The meagre budgetary allocation to arrest infrastructure problems in India has so far proved to be too little to keep pace with other areas of business development in India. Moreover, the tremendous growth of Indian IT, telecommunication, manufacturing, and pharmaceutical industries has consumed the limited world class urban infrastructure available in India. The urban infrastructure problems in India are urban residence, business, urban premises, power urban transport, water, sewerage, airports, Railways, seaports, roads, bridges, Tourism infrastructure, solid waste management, projects in SEZ, health care, entertainment and communication.

- Rural Infrastructure Problems in India

Rural Infrastructure Problems in India have gone from bad to bad worse in recent years. The government of India has taken some important steps to arrest the age old problems of rural India, such as: connecting 66,800 habitations with all-weather roads, construction of 1,46,000 km of new rural roads, upgrading 1,94,000 km of existing rural roads, allocation of investment to tune of 1,74,000 Crore envisaged under Bharat Nirman. Providing a corpus of 8000 Crore for rural infrastructure Development fund (RIDF) with around 600,000 villages and 70% of its population in rural India, the need of the hour for the government is to develop proper rural infrastructure for the masses in India. The immediate focus area should cover but not be confined to the following areas Power, irrigation, drinking water, rural housing, rods, health care, telecommunication, and main problem is education.⁶

SUGGESTIONS

Two important steps are required for the Indian Infrastructure Sector. Firstly, we need to setup an independent regulatory body like SEBI for infrastructure. The primary role of this body would be attract private investments and protect the investor from various risks. Secondly, we need to have an authority which should take care of sovereign obstacles. The basic role of this body will be to remove the obstacles for public projects and monitor the development of the project.

The new PPP (Public Private Partnership) model has a lot of potential to carry out various infrastructure projects and provide better infrastructure for each sector. Success stories of Gujarat Solar Innovation Project, Delhi Metro Rail Project showcase the power of PPP.

⁵ Available at: https://www.nipfp.org.in/media/medialibrary/2018/05/WP_230

⁶ Available at: <https://www.slideshare.net/deepaksdhaka/infrastructure-in-india-4769087>

CONCLUSION:

Infrastructure, both economic and social, is essential for the development of a country. As a support system, it directly influences all economic activities by increasing the productivity of the factors of production and improving the quality of life. In the last six decades of independence, India has made considerable progress in building infrastructure; nevertheless, its distribution is uneven. Many parts rural India are yet to get good roads, telecommunication facilities, electricity's, schools and hospitals. As India move towards modernization, the increase in demand for quality infrastructure, keeping in view there environmental impact, will have to be addressed. The reform policies by providing various concessions and incentives, aim at attracting the private sector in general and foreign investors in particular. While assessing the two infrastructure- energy and health it is clear that there is scope for equal access to infrastructure for all.

LAW REGULATE INFRASTRUCTURE SECTOR IN INDIA: A CRITICAL STUDY

*Anumeet Kaur**

INTRODUCTION

Infrastructure is the base on which the economic success of the country is built. It is like a father to the economy and in India, the government is doing hard work for achieving the best of it is palpable from its committed efforts in this direction. There were days where we saw Noticeable failure were evident in lack of water, power in most of the part of India, also poor road conditions and cargo handling which causes delays at an airport in India. These entire sectors were used to handle by the government organization.

In the present scenario, the infrastructure sector in India has opened an economy market where the private as well foreign investors have also played an important role in attaining planned and consistence economy development. Because of the contribution of the private sector major change has been seen in the telecommunication sector as it develops very strong and the major reason is that it is controlled by the private sector.

The infrastructure sectors administer by statutes and these statutes help the participation of the private sector. Commonly private investors get permission through a grant of licenses or through a contractual relationship. The part played by private investors in the infrastructure sector is really helping in increasing the employment, income generation in the country.

India infrastructure swiftly expanded over last one decade for example; “Current annual investment for 2016 -2020 is anticipated at 118 USD billion”, By 2025, based on the project that already been started, electricity generation capacity will almost double and also the highways and metro will also increase by 1.5 and 6 times respectively.

The legal structure within which the infrastructure sectors function has been explained, in brief hereunder;

Airports: The Government Policy on Airport Infrastructure, 1997 observed and prepared a comprehensive plan for progress and upgrade of all the airports by the help of the controlling agency following the outline of the practices of the International Aviation Organization. The policy acknowledges the need for private participation for the progress of airport infrastructure. Establishment of private airports and leasing out airports to the private organizations is now permitted subject to prior approval of the central government.

Airports are governed by Airport Authority of Indian Act, 1994, the Aircraft rules 1937 and the Aircraft act 1934. All these acts allow private participation to contribute in the airport through the issuance of license other than owned by the Central Government and formation of joint ventures with the Airports Authority of India. With the help of the Airport Authority

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of India Act, 1994 in 2003 India amended the act so that the private investors can participate in the progress of Airport infrastructure.

There are 122 airports which are regulated by the Airport Authority of India. The cities Bangalore, Delhi, Hyderabad, Kochi, and Mumbai are governed by privately or joint-venture operated airports. Airports in India handled 295 million passengers in 2017.

The government in a joint venture with private sector preparing two big plans for the civil aviation policy includes “corporatization of the air traffic control system” and “Greenfield airport”. All these efforts and plans will affect the airfare and make it more comfortable for the Travellers.

Greenfield airport project is the one where a private organization or a joint venture facilitate operate the new airport facilities without the prior approval of the Government and entered into Build-Own-transfer (BOT), Build-Own-Operate(BOO) Contracts.

Loop whole: All the projects related to airport infrastructure development maximum attention is on comforting the travelling experience for the passengers. But the cargo facilities have been neglected in the entire recent project. There were many complaints against the cargo facilities and ground handling but yet there is no planning to correct this error in any plan. The government and all the private sector dealing with this sector need to establish separate cargo facilities that include storage, ground handling, and loading facilities as air cargo is expected to grow in recent years.

Roads and Highways: India has widespread road network of 3.3 million kilometres. This type of network is the second largest in the world and it is governed by National Highway Act 1956. The roads in India carries 65% of the goods (Trucks) and 80% of passenger traffic, the quality and level of the roads not at all in good conditions as Indian roads are full with Pit. This is the sector which required maximum attention for development. Because of this Government of India spends nearly US \$ 4 billion annually on road development, and persuade private and foreign investors in this sector. Most of the private investors participate in this sector through bidding or by construction contracts.

The makers or owners have the permission to collect tolls on roads that are part of the National Highway Development Plan, India's largest road project and in this case government does not interfere in this matter. But the National Highway Authority who is a government organization has the power to look all the matters related to this sector like- development, maintenance, and management; we can say that it is the apex government body in this sector. This body grants and conducts all the competitive biddings and construction contracts

Loop whole: To increase the participation of private investors in this sector the government has initiated many schemes like; approved 100% income tax exclusion for a period of 10 years for all road infrastructure development assignment also the NHAI considers gap funding for marginal projects. But after granting all schemes to the developers, most of them are not doing their duties properly and it becomes evident when we see the conditions of the highways and roads in our country. Maximum roads of India have so many pits, roads are in bad condition, levelling is not done properly etc. and because of all these major road

accidents happen in our country. If we see the statistics from 2013-2016 total 1051.3 road accidents happened during these years in I

Telecommunication: The Telecom Regulatory Authority of India Act, 1997 is the prevailing statute applicable to the telecom sector of India. The Telecom Regulatory Authority of India (TRAI) is the governing statute that regulates telecom and internet services in the entire country. This main regulating body which regulates and explain how everything in this sector will work like: powers, the function of the authority, how the appellate tribunal conducts its proceedings. This is the only sector in which we can see the equal contribution of both the sectors private and public entities. The government gave permission for 100% FDI in telecom equipment manufacturing and 100% FDI for various other telecom services, so that well-organized, competent and resourceful environment can be established in the market for the growth of this sector.

Loop whole: This is the only sector where we can see the cut to cut competition between the private sectors entities, but the main problem is all the providers need to improve their IT and connectivity structure, also make sure that all the services should be provided in a very affordable prices. The main problem is the security issue because of new threats as the privacy of the customers is at risk. All the providers need to ensure that they are taking all the precautions on their security systems while giving the services to the customers and the privacy should be on top.

Railway: Indian Railways is one of the world largest railway networks and manages more than 64,000 Km of railway tracks. The complete control like making a policy taking an important decision against the railway sector all have done by the Railway Ministry. They also have their separate budget for the maintenance of this sector. It also regulates all other matters like engineering, traffic issues, staff matters etc. As Indian railways have the domination in carrying goods and passengers at very cheap rates but there are many problems related to service which provided by the railway department during the journey and related to rail tracks.

Additionally, the government of India has strategized and made a plan regarding boosting the speed of the train and doing changes in existing network railway tracks for meeting the present requirement. Till now the government has a monopoly in this sector, but now this market is also opened for private sectors. Now they can also contribute to the development of the infrastructure of this sector. Almost 22 railways station has given to the private sector under PPPs scheme (Public-private partnership). Indian railway also offered 500 acres land to the private investors for the development of railways station, tracks, and transport-related projects.

Loop whole: Now day's government is planning to introduce Bullet train in India but having a bullet train means heavy operational cost, maintenance will also be very costly and need to change alignment too. This project will take a lot of time and this project can be stopped if any change happens in the Government. The new government might be upset this project. Many passengers have also complained about the services offered during the journey is not up to the mark. The food which offered in the train is not at all healthy because of that food

many passengers were fell sick too. So the regulating authority needs to change their pattern so that they can fulfil the requirement of their passengers and gave them a pleasant and healthy journey.

LEGAL STRUCTURE

Under the constitution of India the powers are distributed between Centre and State. The parliament has the authority to make laws on some items like; National Highways and the State legislature have the power to make the laws on an item such as water supply.

Power distribution on legislative powers related to infrastructure Sector is as follows:

Parliament has the power to make laws: Railway, National highway, Telecommunication, Power, Ports, and Airports etc.

Developing the infrastructure of these sectors are the responsibility of the Centre. For proper regulations of these sectors, the centre has made many statutory bodies which regulate and administer each every sector. However, some statutory bodies are also made headed by the private entities, for example, Indian Road Congress Registered Society made for the development of the Road Sector for making new schemes, planning in this sector.

State Level: The legislature has the power to make laws on the items which are as follows: Roads, Bridges, Water supply, water storage, Land administration, revenue, and tenure.

In every state, there are many local authorities, Municipal Corporation whose responsibility is to do local self-government or village administer. The state may by law provide municipalities with the functions and implementations of assured items within which their jurisdiction including:

- Town planning
- Construction of buildings
- Water supply for the commercial, domestic and industrial purpose
- Distribution of electricity
- Construction of Roads and buildings

CONCLUSION

A short time ago most Indian infrastructure was governed by the Government. On the other hand, the participation of the private entities in the development of the infrastructure has given a new shape to this sector. Many infrastructure schemes and plan are governed by concession agreements and contracts between the government and private entities. In all these agreements every detail has mentioned like a tariff, planning, performance standards, rules etc.

With the help of the private entities, many sectors are doing well and fulfilling the requirements of the public by giving them developed infrastructure, services etc. But because of the government change, it affects in a negative way. The Government should establish

regulatory entities that will remain unaffected by the government change in the country and work without any interference.

While establishing the authorities the main motto of all the regulators to work in such a manner so that they can provide excellent facilities services to the people, also ensure good and healthy high quality of service. But these all can happen if these authorities work independently, transparently and report directly to the Government and it should also be legally accountable for the public through judicial review.

INSTITUTIONAL ARBITRATION vis-à-vis INFRASTRUCTURE PROJECTS

Rachi Singh* & Apoorva Singh**

INTRODUCTION

Alternative Dispute Resolution¹ Mechanism has emerged as one of the most significant way of dispute settlement in the past few decades. This is because of the various benefits offered by the ADR mechanism such as quick disposal of disputes, cost effectiveness, simplicity in procedure, convenience in choosing the venue of dispute settlement etc.

The Arbitration and Conciliation Act, 1996 emphasizes on two methods of alternate dispute settlement i.e. Arbitration and Conciliation. Arbitration is a method for settling disputes privately, but its decisions are enforceable by law. Arbitration offers greater flexibility, prompt settlement of national and international private disputes and restricted channels of appeal than litigation.²

Arbitration can be conducted in two ways, Institutional and Ad hoc. Parties are entitled to choose the form of arbitration, which they deem appropriate in the facts and circumstances of their dispute. An ad hoc arbitration is not administered by an institution and therefore the parties are supposed to govern all aspects of the arbitration like the number of arbitrators, manner of their appointment, procedure for conducting the arbitration, etc. whereas in an institutional arbitration, the parties only designate an institution to administer the arbitration by incorporating a provision with respect to that in the arbitration clause of the contract. The parties then submit their disputes to the institution that administers and chooses the arbitral process as per the rules of that particular institution.

ADVANTAGES OF INSTITUTIONAL ARBITRATION OVER AD HOC ARBITRATION

- Since pre-established rules and procedure are available in case of Institutional Arbitration, parties and their lawyers don't have to invest time and effort in determining the procedure and rules of arbitration. The parties only have to choose the institution and once it is done, they can incorporate draft clause of that institution into their contract.
- The arbitration clause of the institutions are drafted by the experts and are revised periodically which ensures that the latest developments in arbitration practices are duly incorporated.

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¹ Hereinafter referred as ADR

² Rajkumar Adukia, *Benefits of Institutional Arbitration and their role in Construction Industry*, Available at: <http://www.caaa.in/image/arbitration2011.pdf> (Accessed on: November 1, 2018)

- In Institutional Arbitration, the arbitrators are selected by the parties from the panel of arbitrators of the institution. The panel consists of expert arbitrators from various fields having special knowledge in their field. Selecting arbitrators from panel ensures that the arbitrators appointed by the parties possess requisite knowledge and expertise and thus result in quick and effective disposal of dispute. On the other hand, in Ad hoc arbitration, the arbitrators are appointed by the parties according to their will and faith and not on the basis of qualification and expertise which might result in appointment of incompetent arbitrators and ultimately in ineffective and delayed disposal of dispute.
- There is continuous monitoring in institutional arbitration to make sure that disputes are resolved in timely manner unlike ad hoc arbitration.
- Another important merit of institutional arbitration is that most of the institutions provide aid of the trained staff who assist in resolving any doubts and deadlocks without knocking the door of the court. On the other hand, in ad hoc arbitration, the parties have to move to the court to resolve deadlocks and thus result in delay in completion of proceedings.³
- In addition to administration, certain arbitral institutions, like the International Chamber of Commerce (ICC), and the International Court of Arbitration (ICC Court) in Paris, scrutinize an award before it is published to the parties, thus ensuring that the reasoning and content of the award deal with all claims and counterclaims made by the parties and that the principles of due process have been adhered to throughout the course of the proceedings.⁴
- Most of the institutions have the mechanism for determining the remuneration of the arbitrators and thus save the parties and the arbitrators from the discomfort of discussing and fixing remuneration. The major advantage of existence of such mechanism is that it allows the arbitrators to focus on the substance of the dispute rather than discussing remuneration with the parties.

REASONS FOR DISPUTES IN INFRASTRUCTURAL PROJECTS

Construction sector is one of the pioneer sectors in any developing economy like India. This sector has shown such a growth in recent past that now it is second largest employer of manpower in the country and nearly half of the planned expenditures are spent on construction and infrastructure.⁵

Generally construction can be classified into three categories, Infrastructural, Industrial and Real Estate. Infrastructure includes construction projects in railways, roadways, irrigation, power etc.

³ Sundra Rajoo, *Institutional and Ad hoc Arbitrations: Advantages and Disadvantages*, Available at: <http://sundrarajoo.com/wp-content/uploads/2016/01/Institutional-and-Ad-hoc-Arbitrations-Advantages-Disadvantages-by-Sundra-Rajoo.pdf> (Accessed on: November 2,2018)

⁴ Ibid

⁵ Supra note 1

Infrastructure and construction projects are complex in nature. The capital investment is high, gestation period is long, multiple stakeholders are involved, involves a suite of intricate contracts and detailed requirements to address design, procurement, construction, installation, and commissioning, as well as the operation of the project. The contracts usually do not define the roles and responsibilities of the parties clearly.

Since thousands of different activities occur at any one time while a project is built, even on the best managed projects, problems arise and delays occur. Therefore these projects are prone to disputes and litigation specially relating to delays, liquidated damages, price escalation etc.

Time is of essence in construction industry because for every day of delay, the contractor incurs additional overhead and running costs, while the employer sees the date on which it begins to earn a return on his investment deferred, and as each party's financial position deteriorates, the gap between them grows.⁶

Moreover, the construction firms are required to bid for projects at minimum possible price which puts them in a situation where they are supposed to execute intricate projects with limited capital and low quality material. Under these situations, it is not surprising that disputes arise on various issues and also at alarming rate.

Infrastructural disputes also involve a lot of factual complexity. Unlike other sectors, small and discrete questions pertaining to promise made or existence of particular situation responsible for breach of contract etc. lead to disputes between the parties.

Construction cases require an extensive unravelling of the facts and it is essential to have a dispute mechanism which allows the decision maker to properly understand what was happening at any given time in a project where hundreds of activities may be proceeding simultaneously over a period of years.⁷

NEED FOR INSTITUTIONAL ARBITRATION IN INFRASTRUCTURAL PROJECTS

India has been ranked 35th among 160 countries based on a worldwide survey of stakeholders on the ground providing feedback on the logistics "friendliness" of the countries in which they operate and those with which they trade.⁸ This indicates that most of the countries wish to have trade relations with India and the trend shows that the sectors in which the countries wish to invest include infrastructural projects involving highways, bridges, dams etc.

⁶ A Global Perspective on Arbitrating Construction and Infrastructure, Available at: <https://www.herbertsmithfreehills.com/latest-thinking/a-global-perspective-on-arbitrating-construction-and-infrastructure> (Accessed on: November 3, 2018)

⁷ Ibid

⁸ India jumps 19 places in World Bank's Logistics Performance Index, World Bank's Logistics Performance Index, Available at: <http://pib.nic.in/newsite/PrintRelease.aspx?relid=149385> (Accessed on: November 3, 2018)

The infrastructure sector in India witnessed 33 deals in FY 2016-17 involving US\$ 3.49 billion as against US\$ 2.98 billion raised across 31 deals in FY 2015-16, with the majority of deals led by power, roads and renewable sectors, as per investment bank Equirus Capital. It is observed that most of these projects end up in disputes involving crores and it wouldn't be wrong to say that India is rising as a hub for International Commercial Arbitrations.⁹

Infrastructural projects have emerged as one the major sectors where arbitration is welcomed. The peculiar kind of disputes involved in infrastructural projects requires quick settlement without the getting involved in the tedious court proceedings.

Most of the arbitration in construction and infrastructure sector are ad hoc in nature as against institutional arbitration globally. In India, there are a few prominent domestic institutions which conduct institutional arbitration such as the Indian Council of Arbitration (ICA), the International Centre for Alternative Dispute Resolution (ICADR), the Construction Industry Arbitration Council, etc. However, so far, only a few cases have been handled by these institutions. Many Indian companies approach foreign arbitration centres such as the Singapore International Arbitration Centre (SIAC) and the London Court of International Arbitration (LCIA), leading to a loss of arbitration business opportunity for India. At present, Indian parties account for around 30 per cent of the arbitration cases handled by the SIAC and LCIA.¹⁰

Advantages of institutional arbitration have already been discussed and these advantages become all the more important when it comes to construction and infrastructure sector. Since the institutions have pre-established rules and expert arbitrators, the speed and the accuracy of dispute resolution is well maintained.

The availability of contemporaneous documentation, such as construction programmes, as well as correspondence is paramount. If the parties decide to go to court for dispute resolution then the production of required documents become a relevant issue. This is because, while some countries have rules for requiring production of such documents from the other party, many countries do not have such rules.¹¹ This lack of a disclosure process in court pushes parties to use arbitration where a tribunal, even under the rules of most local institutions¹², will have the power to order the exchange of relevant documents.

Factual witnesses are also very important as they can provide an account of what was happening on site during critical periods of the project. Again, regional expectations differ

⁹ Anviti Bhadouria, *Institutional Arbitration As Remedy For Future Infrastructure Disputes?*, Available at: www.legaleraonline.com/articles/institutional-arbitration-as-remedy-for-future-infrastructure-disputes (Accessed on: November 5, 2018)

¹⁰ New policy initiative to fast track arbitration in infrastructure, Available at: <https://indianinfrastructure.com/2017/03/04/speedy-resolution/> (Accessed on: October 22, 2018)

¹¹ Countries like Qatar, UAE etc.

¹² For instance, Article 27.3 of the Dubai International Arbitration Centre Rules provides: "At any time during the arbitration, the Tribunal may, at the request of a party or on its own motion, order a party to produce such documents or other evidence within such a period of time as the Tribunal considers necessary or appropriate and may order a party to make available to the Tribunal or to an expert appointed by it or to the other party any property in its possession or control for inspection or testing."

and this can cause considerable difficulties in administering the process in some of the key markets for construction cases.¹³ These differences in court rules could be avoided by adopting institutional arbitration in place of court proceedings. The pre-established rules regarding evidences and availability of expert arbitrators would ensure that arbitration proceeds without delay.

Construction projects are complex in nature, so are the disputes involved in construction projects. Therefore the need of expert evidence from engineers, programming experts or quantum experts relating to the extent and causes of delay, how much additional cost the contractor is entitled to recover, whether the works comply with the specification or why the works are not performing as they should arises. Most of the arbitration institutions allow the parties to appoint such experts to assist their counsels to make the tribunal understand their claim and assess the damages in a better way. On the other hand, courts of many countries offer the facility of appointing independent expert, which may come as a surprise to where parties are used to each side appointing their own independent expert and moreover can be fundamental to a party's presentation of its case, and to what type of arbitrator is the right fit for the dispute.

EXISTING SITUATION OF INSTITUTIONAL ARBITRATION IN INFRASTRUCTURAL PROJECT IN INDIA

While multiple foreign investors have been investing in India, there have been considerably less investors opting for India as a seat for Arbitration. Therefore efforts are to be made to show that our country is not just investment friendly but also arbitration friendly. This is evident from the Law Commission's report which has emphasized on promotion of institutional arbitration in India and has mentioned in its recommendation, "*The spread of institutional arbitration however, is minimal in India and has unfortunately not really kick-started. In this context, the Act is Institutional arbitration agnostic – meaning thereby, it neither promotes nor discourages parties to consider institutional arbitration.*"¹⁴

In India, there are a few prominent domestic institutions which conduct institutional arbitration such as the Indian Council of Arbitration (ICA), the International Centre for Alternative Dispute Resolution (ICDAR), the Construction Industry Arbitration Council, etc. However, so far, only a few cases have been handled by these institutions. Many Indian companies approach foreign arbitration centres such as the Singapore International Arbitration Centre (SIAC) and the London Court of International Arbitration (LCIA), leading to a loss of arbitration business opportunity for India. At present, Indian parties account for around 30 per cent of the arbitration cases handled by the SIAC and LCIA.¹⁵

With a view to providing an institutional mechanism for resolution of construction and infrastructure related disputes, the Construction Industry Development Council, India (CIDC)

¹³ *Supra note 5*

¹⁴ Report No. 246 Amendments to the Arbitration and Conciliation Act 1996, Available at: <http://lawcommissionofindia.nic.in/reports/report246.pdf> (Accessed on: October 23,2018)

¹⁵ *Supra note 9*

in cooperation with the Singapore International Arbitration Centre (SIAC) has set up an Arbitration Centre in India called the Construction Industry Arbitration Council (CIAC).¹⁶

This Centre has pre-determined rules relating to time period within which claim is to be filed, time period within which reply is to be filed, time period within which Arbitrator is to be appointed, rules relating to Award etc. Moreover, the panel of arbitrators consists of professionals from the construction industry as well as the legal fraternity.

Other efforts for promotion of institutional arbitration includes setting up of first international arbitration Centre in Mumbai in October 2016 called Mumbai Centre for Institutional Arbitration (MCIA). This institution is an attempt to combine and bring forth the experience of some of the best minds in Indian Arbitration (including the Managing Partners of several Major Law Firms as well as eminent jurists such as Mr. Harish Salve and Mr. Fali. S. Nariman) with the help of experienced practitioners in the ICC and the SIAC.

Some distinguishing features of MCIA include arbitral rules drawn on the latest innovations in international arbitration best practice and also in harmony to the Indian market, scrutiny of awards by the MCIA to ensure that the award is sound and therefore less likely to be challenged in Indian courts, presence of a dedicated secretariat which facilitates the efficient, flexible, cost-effective and impartial administration of arbitration proceedings, world-class premises specifically designed for the conduct of arbitration hearings equipped with dedicated hearing rooms, break-out rooms and transcription facilities.¹⁷

Hence it is evident that existing arrangement for institutional arbitration in infrastructural sector is limited and there is a need of establishing more and more institutions for arbitration and establishing institutions meant specially for conducting arbitration to resolve disputes arising in construction and infrastructural sector.

ARBITRATION AND CONCILIATION (AMENDMENT) ACT, 2015

The Arbitration and Conciliation (Amendment) Act, 2015 came into effect on October 23, 2015, repealing the old Arbitration and Conciliation Act, 1996 with the aim to make arbitration the preferred mode of settlement of commercial disputes in India by making it viable and cost-effective, and make the country a hub for international commercial arbitration.

The Amended Act provides for faster timelines to make the arbitration process more effective. The arbitral tribunal is to hold oral hearings for evidence and oral argument on day-to-day basis and not grant any adjournments unless sufficient cause is made out.¹⁸

¹⁶ *Supra note 1*

¹⁷ Rajesh Begur and Priyesh Sharma, *An Overview Of India's First Institutional Mechanism: Mumbai Centre Of International Arbitration (MCIA)*, Available at: www.mondaq.com/india/x/538594/Arbitration+Dispute+Resolution/An+Overview+Of+Indias+First+Institutional+Mechanism+Mumbai+Centre+Of+International+Arbitration+MCIA (Accessed on: October 24,2018)

¹⁸ Proviso to Section 24 of Arbitration and Conciliation (Amendment) Act, 2015

The Act permits arbitral award to be made within 12 months from the date of reference, though parties may, by consent, extend the period for another six months.¹⁹ The mandate of the arbitrator is to terminate the proceedings if the timelines are not adhered to, unless the time is extended by the court.²⁰ However, there is no time period fixed for approaching the court seeking extension of time which may again contribute to delays. Further, while extending the time for making the award, if the court finds that the delay was attributable to the arbitral tribunal, it may order reduction in the arbitrator's fee by not exceeding 5% (five percent) for each month of such delay.²¹

In an arbitration regime that was plagued with delays and costs, this is a good development. The fixed timelines for the completion of arbitration proceedings are expected to ensure that construction and infrastructure projects are not left in a limbo for indefinite periods of time. This will also help infrastructure companies get loans from banks, which is currently curtailed because of the fear of the loans turning non-performing/bad due to delays in project execution.²²

The new Act also provides for an option to the parties to agree on a fast track mechanism under which the award will have to be made within a period of 6 (six) months from the date the arbitrator(s) receiving written notice of appointment.²³ However, the parties would be forced to go court to seek extensions of time to complete the arbitrations, which is an undesirable situation in a court system burdened with huge pendency of cases.

Moreover, the provision requiring reduction in fees paid to the arbitrator in case of delay would avoid the delay on the part of the arbitrator which is again a good step and of great importance in case of construction and infrastructure sector.

THE NEW DELHI INTERNATIONAL ARBITRATION CENTRE BILL, 2018: AN ANALYSIS

Minister of State for Law and Justice, Mr. P.P. Choudhary introduced the New Delhi International Arbitration Centre Bill, 2018 on January 5, 2018 in the Lok Sabha. The objective of the Bill is to inspire confidence and credibility among the litigants of commercial dispute.

The Bill seeks to establish New Delhi International Arbitration Centre (the “NDIAC”) to conduct arbitration, mediation and conciliation proceedings. The main function of NDIAC is to conduct arbitration and conciliation in a timely, professional and cost effective manner and to promote study and research in the field of alternative dispute resolution. The NDIAC will revamp the procedural framework and governance structure that was previously in place under the ICADR. The Bill seeks to transfer the existing ICADR to the central government. Upon notification by the central government, all the rights, title, and interest in the ICADR

¹⁹ Section 29A(1) of Arbitration and Conciliation (Amendment) Act, 2015

²⁰ Section 29A (4) of Arbitration and Conciliation (Amendment) Act, 2015

²¹ Proviso to Section 29A(4) of Arbitration and Conciliation (Amendment) Act, 2015

²² *Supra note 9*

²³ Section 29B of Arbitration and Conciliation (Amendment) Act, 2015

will be transferred to the NDIAC. Since NDIAC will be established pursuant to the notification by the Central Government it will be exempted from other requirements like to maintain number of minimum shareholders and directors which other body corporates established under the Companies Act, 2013 has to maintain

NDIAC will be a body corporate, it will have perpetual succession and a common seal that will permit it to acquire and transfer property, and enter into contracts in its own name. It is different from the ICADR and ICA that are registered as a society under the Societies Registration Act, 1860.

NDIAC has been proposed to be declared an institute of national importance by the Bill. The Central Government has for the first time proposed to declare an Arbitral Institution as an institute of national importance meaning thereby that NDIAC will have autonomy in financial, administrative and academic activities.

In order to give all the financial assistance to NDIAC to promote research and study, organize conferences and seminars to make everyone aware about alternative dispute resolution, the Central Government has proposed to make contribution to the funds of NDIAC every year.

With respect to organizational structure, the Bill seeks to establish NDIAC consisting of seven members only that will be appointed by the Central Government, unlike ICADR that consisted of 47 members and MCIA consisting of 17 members. Thereby expediting the decision making process. Lack of coordination among so many members causes delay in the decision making process of arbitration institutions.

However there are certain ambiguities in the Bill, like Central Government has been given huge power with respect to appointing members of NDIAC and their removal. In fact Central Government is the sole appointing authority. Moreover, Central Government is also a periodic contributor to its funds. Investors adopting alternate dispute resolution to settle their disputes will have apprehensions because of the proactive role played by the Government especially in cases where opposite party are a public sector undertaking.

Further, the Bill only addresses the administrative issues in relation to NDIAC. It remains to be seen how the procedural framework concerning the settlement of disputes is laid. In order to present NDIAC as a preferred arbitration institute, it must have separate provisions such as consolidation of arbitrations, emergency arbitrators, immunity to arbitrators and confidentiality of information that were not envisaged under the ICADR Rules must be incorporated in the NDIAC procedural framework.²⁴

CONCLUSION

Arbitration has been a long used method of dispute settlement in India. However most of the arbitration in the construction and infrastructure sectors are ad hoc in nature, as against institutional arbitration globally. As we have already seen very few cases are being handled

²⁴ Binsy Susan, Neha Sharma, *New Delhi International Arbitration Centre: building India into a Global Arbitration Hub*, Available at: <http://arbitrationblog.kluwerarbitration.com/2018/05/04/new-delhi-international-arbitration-centre-building-india-global-arbitration-hub/> (Accessed on: November 5, 2018)

by prominent domestic institutions in India. Many Indian companies approach foreign arbitration centres, leading to a loss of arbitration business opportunity for India.

In the last few years, several measures have been initiated like establishing of first international arbitration centre in Mumbai in October 2016 and the proposed New Delhi International Arbitration Centre Bill, 2018 to make India a hub of Global Arbitration. The Bill, establishing NDIAC with an organised governance structure, will replace the outdated ICADR and lay a strong foundation in the institutional arbitration setup of India. Moreover there is also a proposal to establish the Arbitration Council of India which will grade the arbitral institutions in India. This review will certainly instill confidence among the investors especially with respect to NDIAC.

However it is also important that the Parliament must remove all the ambiguities associated with New Delhi International Arbitration Centre Bill, 2018. A transparent process should be adopted with respect to appointment and removal of members of NDIAC. In order to gain investors' confidence, the Central Government involvement must be phased out.

Most importantly it is important in India the arbitration institutions should be independent, efficient and transparent. It is also highly desirable that a pool of professional arbitrators, who are competent, technically sound and specialized in their field to be appointed as arbitrators instead of retired judges as arbitrators, cases move at a slow pace like happens in the judicial settlement. Moreover, they charge exorbitant fees.

It is also desirable to use technology in order to reduce time and improve efficiency in the process of arbitration. Technologies such as e-filing, online dispute resolution and videoconferencing need to be put to extensive use in the process of arbitration.

Lastly, the recent reforms are certainly a step in the right direction to strengthen the arbitration procedure in India. In order to make India a global hub for international arbitration, it is essential to make sure that the process is transparent and less time consuming. For this, institutional arbitration, minimization of judicial interference and adherence to time lines will play a key role in making the process user friendly and cost effective.

CHALLENGES OF HYDROPOWER PROJECT DEVELOPMENT IN NEPAL

*Nabin Bhandari**

Abstract

Experts estimate that Nepal has potential to generate 83,000mv hydroelectricity out of which 43,000mv is economically and technically feasible. Despite of the huge potential, Nepal is only able to produce 995mv electricity and 40% of the total population of Nepal has access to electricity by the end of 2016.

Considering the massive potential, many of the foreign investors are intending to invest in the hydropower sector. However, it is necessary to ascertain the potential challenges the investor may face during the hydropower project development. This paper explains about the challenges associated with the development of hydropower project in Nepal along its mitigation measures. The challenges are determined on the basis (a) past instances that the hydropower project have faced and (b) review of existing governing law related to hydropower sector.

Private land acquisition is one of the main challenges for the investor which requires a lot of time and effort. There are many instances where the local community has opposed for the construction of hydropower project. In addition to this, the local community has high expectation from the investor which includes (a) expectation for construction of road, bridges, schools and hospitals and (b) local ownership over the project.

At the current situation national and cross broader transmission lines are inadequate which is the major constraint in evacuation of generated power is. Further access road upto the hydropower project site are insufficient. Moreover, there are other challenges such as (a) government lacks comprehensive resettlement and rehabilitation policy for the effected person of the project and (b) lack of availability of market for surplus energy.

Nepal has a huge potential for hydropower but to utilize it in the most fruitful way is much needed. Local consultation and local participation is much required for the project development. Further government should (a) enact comprehensive resettlement and rehabilitation policy for the effected person and (b) approach for neighboring country such as China, Bangladesh, India and other SAARC member countries for the sale of the surplus electricity.

Keywords: Infrastructure, Hydropower, mitigation, resettlement and rehabilitation etc.

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INTRODUCTION

Experts estimates Nepal have potential to generate 83,000mv hydroelectricity out of which 43,000mv is economically and technically feasible. There are more than 6,000 big and small rivers originated from Himalayas discharging 224 billion cubic meter of success run of water annually.¹ Despite of the huge potential, Nepal is only able to produce 995mv electricity by end of 2017² and 40% of the total population of Nepal has access to electricity by the end of 2016. More than 97% of feasible capacity has not been realized yet.

To fulfil the energy demand Nepal is importing 380mv from India.³ Looking after the current scenario only 3% of energy demand of the country is fulfilled through electricity produce from hydropower. The remaining is fulfilled by bio mass (78%), petroleum products (12%), Modern Renewal (3%) and coal (3%). Having immense potential of hydropower development, it is important for Nepal to increase its energy dependency through hydropower project.

Considering the massive potential, lot of foreign investors are intending to invest in the hydropower sector of Nepal. The ratio of the investment through the private sector is increasing in number. Many foreign companies have come forward with their interest in the country's energy sector. On recent days' hydropower sector has dominated the investment portfolio, among which China and Indian companies are the main investor. According to the Independent Power Producers Association, Nepal (IPPN), the private sector has invested Rs 55 billion in 25 hydro projects till the date since the first private power plant was established in 2000.⁴

Government has understood that the hydropower project development can be one of the means for the economic development of the country. As a result, this sector is on government's topmost priority. With the enactment of the Hydropower Development Policy, 2049 (1992), private sector was opened for the investment in hydropower. This policy was incorporated with the objective to raise the investment from foreign and the national private sector.

To encourage the investment numbers of acts, rules and policies have been amended. Government has provided fiscal incentives for the hydropower project which includes (a) 100 percent income tax exemption for the first 10 years and 50 percent income tax exemption for the next five years after the commercial generation of electricity and (b) 100 % Value Added Tax is exempted to imports machinery, equipment, and the tools required for hydropower

¹ Rajuria, A., *Development of Small Hydropower Project in Nepal*, Business Development Forum, Volume 9, 2016, pg. 6.

² Department of Electricity Development, *List of License*, Available at: http://doed.gov.np/operating_projects_hydro.php

³ Nepal to Import 500mv from India: Sport Light News Magazine, August 10, 2017, Available at: <https://www.spotlightnepal.com/2017/08/10/nepal-import-over-500-mw-electricity-india/>

⁴ Market Data for Private Sector Investment in Nepal in Renewal Sector, Dolma Development Fund at al. September, 2014.

project. Similarly, no Value Added Tax is applicable on transaction of such machines and equipment's. Hydropower Company can also carry forward the project loss for 12 years. Moreover, the prevailing law has assured protection from nationalization of the project during the term of hydropower license. In addition, Nepal Rastra Bank (NRB) has issued a circular making mandatory for commercial banks to make 10 % of their total lending to the agriculture and energy sectors.

Despite the government effort to encourage the private investor for investment in hydropower still there are some challenges that need to be addressed. The major challenges are explained in below paragraphs:

Policy Inefficiency: Government has made many reforms and amendment in laws governing the hydropower. However, there are not sufficient. The main policy challenging issue for the investor are (a) long and complex legal procedure to receive the hydropower license and Foreign Direct Investment (FDI) approval, (b) Non-implementation of One Window Policy, (c) Lack of proper comprehensive resettlement policy, (d) complex environment clearance approval such as Initial Environment Examination (IEE)/ Environmental Impact Assessment (EIA) and other regulatory approval.

Procedural hassles to set up the business and operation challenges after incorporation are one of the main bottle necks to attract the investment in Nepal. Receiving the hydropower survey/generation license is time consuming with the procedural hassles. The same applies to other approval required during the project development such as (a) FDI Approval, (b) IEE/EIA Approval, (c) land acquisition approval and other government approval required. Along with Ministry of Energy and Department of Electricity Development (DOED) the investor has to collaborate with 6 Government Ministries' and 22 Governments Departments while developing the hydropower project, despite the government has committed to adopt one window policy. The investors need to take approvals and permit from many departments. This has caused delay in project development, which is one of the main factors of discouragement to the investor.

Similarly, the investor has to rely on 36 laws during the process of development of the project. Furthermore, there are various impartial laws as well which hinder the construction of project. For instance, forest clearance procedure is one of the hectic issues for the developer since 25 trees has to be planted if one tree is cut down. Investors get frustrated due to delays in the process of documents like permit, approval and clearance. Moreover, the Government of Nepal lacks comprehensive resettlement and rehabilitation policy for the effected person by the hydropower project.

To address this policy inefficiency, government need to reform and enact the necessary law. Similarly, the implementation of one window policy has to be implemented promptly.

Issue of Land Acquisition: Most often hydropower project face problems during acquisition of private land from local communities. Special approval is required from Ministry of Forest and Social Conservation for the use of land of forest, national parks and conservation area.

Acquisition of land requires lot of time and effort as different level of negotiation has to be done to local community. To address this problem project has to prepare effective resettlement plan with adequate compensation and facilities.

There are many instances where the local people has opposed for the construction of hydropower project because of non-providing appropriate compensation amount. Opposition of the local community has caused delay in completion of hydropower project on the schedule time.

Market Availability of Surplus Energy: After the generation of electricity most challenging issue is availability of market for surplus energy. By October 2018, DOED has granted the Survey License for Electricity Generation for 310 projects with the total capacity of 18,583mv. In addition, Generation License is granted to 185 projects with the total capacity 5,881mv. Similarly, 20 projects have newly applied to receive the Survey License with the total capacity of 971mv.⁵ Nepal expects to produce the surplus energy in few years. Only few percent of electricity will be consumed by Nepal and the surplus energy needs to be export abroad after the completion of the approved project. Therefore, Nepal should create viable alternate electricity market to export its surplus energy. Neighboring country India, Bangladesh and other SAARC countries are potential country where surplus energy can be exported. Similarly, China is also another viable market.

Despite of availability of wide possible market there are several challenges for export. The major challenge is restraint created by Indian law to export energy produced by the foreign investor other than India. Ministry of Power of India has issued a Guideline on Cross Border Trade of Electricity' on 5th December 2016 to regularize electricity trade with its neighbors Nepal, Bangladesh, Bhutan and Myanmar. The guidelines have imposed certain restriction to export of electricity produced by the foreign companies in Nepal. Pursuant to the guidelines companies fully owned by the government of Nepal and companies having 51 percent equity investment of Indian public and private companies can only export power to India. However, India may also allow the cross broader transmission to other project on case to case basis with the special approval of concerned authority.⁶ Further Nepal want to export the Surplus energy to other SAARC Countries such as Bangladesh, Pakistan and other countries, for that purpose Indian transmission line has to be used which requires co-operation with Indian Government. Therefore, India is the role player of electricity market to the third country.

Besides SAARC countries other potential market is China however due to geographical condition it will be difficult to construct the cross boarder transmission line crossing the Himalayan range. Nepal and China has jointly initiated to develop cross broader transmission line between countries and the progress is ongoing. Further to note that Nepal has already signed MOU with Bangladesh for energy co-operation. This are some little steps made for

⁵ Department of Electricity Development, List of License, Available at:
http://doed.gov.np/operating_projects_hydro.php

⁶ Section 5.2.1 of Guideline for Cross Border Trade of Electricity of India, 2016

energy co-operation. A lot of government effort is required to co-ordinate with foreign countries to export surplus energy on days to come.

Insufficient Infrastructure: Most of the hydropower projects sites are located on the remote area of Nepal which lacks access of road, transport, communication facilities, transmission line for power evacuation and other infrastructure facilities. Because of insufficient infrastructure cost of the hydropower project is expected to be higher.

In additional inadequate domestic and international cross border transmission line is one of the bottlenecks for the hydropower development in Nepal. Insufficient transmission lines are a major constraint in evacuation of generated power. There are few instance where some of the hydropower project were unable to evacuate the generated power because of absence of transmission line. Therefore, investment in domestic and international transmission line is most required for hydropower development.

High Expectation of Local Community: Expectation of Local Community towards the Hydropower Project is being increasing. Local Community has started to demand high facilities such as construction of road, bridges, schools, hospitals and other support before the investor which are unreasonable for the small hydropower project. This has increased the overall cost of the project.

There are some projects which were delayed due to local level demand. Satluj Jal Vidyut Nigam got permission to construct Arun III of capacity 900mv after making a commitment to provide 30 Unit/month to effected local people and securing the employment opportunity of the local community of Hydropower Project effected area. The Company also agreed to provide 21.9 percent free energy to Government of Nepal which is 197mv. Upper Madhi Hydropower Project- 25mv having investment of 80% of share of CWE has entered into 23 Point Agreement with local community before construction of project. Investor has committed to provide financial support for construction of roads, irrigation, school, health, provide ambulance and other additional support for the local community. Project such as Kaligandaki-A; along with resettlement established primary school, conducted different skill based training and high priority was given to local community while hiring in employment of project. Similarly, Chilime Hydropower Project (51% investment by Nepal Electricity Authority (NEA) and by General Public) has distributed 10% share to Local people affected by the project. Several other projects, namely Khimti (60mv), Bhotekoshi (45mv), Buddhigandaki (1200mv), Upper Balefi (50mv), have been facing problem associated with benefit sharing. The local residents demanded shares in Khimti and Bhotekoshi, which are completed and have been operational for several years. The Upper Balefi project (50mv) could not go into construction smoothly due to the demand for benefit sharing by local villagers.

High Cost of Hydropower Project: The existing cost for development of hydropower project is more expensive because of reliance on bilateral and multilateral financing agencies, costly foreign consultants/contractors and limited manufacturing equipment required for project. Similarly, unfavorable geographical condition of the country has also become one of the

reason for increase in cost project. In addition, unreasonable demand of local community has also been the cause of increase in cost.

Nepal's hydro-power sector remains to be non-competitive due to the lack of these pre-requisites, which Nepal fails to realize. It is estimated that the government developed medium-sized hydropower cost an average of US\$ 2,800/KW while private generators have been able to produce at US \$ 1,000/KW. In this context, making the government invested project cost is higher than that of the private sector.⁷

NEA is a Sole Authority: NEA is the sole authority to buy the energy produce by the hydropower project in Nepal. It is also the sole distributor of the electricity in the country. There is absence of competition on area of buying and distribution of electricity. Therefore, government should realize the importance of liberating the monopoly of NEA. Private sector should also be encouraged for transmission and distribution activities of electricity.

Political Risk: There is policy available to cover the risk of force measure and natural disaster. However, there is absence of policy to cover the political risk caused due to change in law and other form of government intervention. In Nepal Power Development Agreement is executed to undertake such type of risk. However, the current Power Development Agreement which are executed by the Government with the other investor has not adequately addressed the coverage of political risk. Therefore, Nepal should develop the appropriate mechanism to address the issue of political risk.

Foreign Currency Exchange Risk: Foreign Investors are demanding to execute the PPA in US Dollar. However, the government has declared policy of signing the PPA in dollar for 10 years only which is considered as the sufficient time to repay the loans. Though NEA is against the government policy pressuring not to implement this policy.⁸ Considering the conflicting situation government official are reluctant to sign PPA in dollar.

NEA preference for signing the PPA in Nepalese currency may discourage for the foreign investor. This may cause long term implication for the foreign investors in the hydropower sector in Nepal as Nepalese Currency being a weak currency, is extremely prone to currency risk fluctuation.⁹ The best way to address this issue to create a hedge fund and revenue received from the license fee, royalty , VAT ad Income Tax and change into dollar and deposit in the hedge fund.

CONCLUSION

Lots of commitment and declaration has been made by the government with the motive to attract the investment in hydropower sector and wipe out the challenges faced by this sector.

⁷ Adhikari, Deepak, *Hydropower Development in Nepal*, Economic Review, pp. 72 to 86.

⁸ Akilesh Tripathi, *Hydro Sharing the Risk*; *Republica Daily*, Available at: <https://myrepublica.nagariknetwork.com/news/6304/> (Accessed on: September 26, 2016)

⁹ *Supra note 4*

However, implementation of such commitment and declaration are not such progressive. Huge effort has to be made by the government to deliver the outcome of the commitment.

Legal reform on number of legislation is required to create the favourable environment. Further, no matter how much noble the law is, effectiveness of law depends on how the government agency function to implement the law therefore institutional efficiency is also necessary prerequisites. Government agency should be able to provide the best quality of service and the approvals and permits should be granted on time.

The another point to address is that the government target should not only be focused to attracting investment but also should give emphasis on finding the appropriate market to supply surplus energy and strengthening the power infrastructure.

LEGAL DIMENSIONS OF ECONOMIC GROWTH THROUGH INFRASTRUCTURES DEVELOPMENT IN HEALTH CARE AND EDUCATION SECTOR

Prem Singh Bisht*

Abstract

The essence of Human Resource Development in Education Sector and Health Care Sector play a vital role in balancing the socio-economic fabric of a country. Since the citizens of a nation are the most valuable human resource and thus the quality of its people is the most crucial factor in determining the over all growth and development of a nation. In this connection it has been aptly observed by the Kothari Commission on Education (1964-66) that, the destiny of India is being shaped in her classrooms. Therefore, in-order to stand distinctly among the developed nations of the world it is imperative to focus on the nurture and care aspect of basic education and healthcare of our people for a better quality of life leading to an enhanced productivity. In this regard Constitution of India being a living document contains elaborate provisions in its part III and IV, which deals with the Fundamental Rights and Directive Principle of State Policy respectively.

The National Health Policy and the National Educational Policy documents need to be re-examined in the light of the best practices world over in this connection. Hence an appropriate model of economic growth through infrastructure development in health care and education sector needs to be conceptualized in the light of the rural-urban divide, its plurality and regional variations in a vast country like India, rightly known as a sub-continent. The studies at hand envision the modalities of infrastructure development by exploring the legal dimensions of Education and Health care sector, to meet the challenge of economic growth of modern day India.

Keywords: Infrastructure, socio-economic fabric, modalities, Plurality, Human Resource, Human Capital, Enhanced productivity etc.

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INTRODUCTION

Late President of India Dr APJ Abdul Kalam¹ aptly described in Indomitable Spirit that “*When learning is purposeful, creativity blossoms, when creativity blossoms, thinking emanates, when thinking emanates, knowledge is fully lit, when knowledge is lit, economy flourishes.*” In this context it would be pertinent to mention that well established physical and social Infrastructure are essential for a nation’s rapid growth of economy, improvement in quality of its human capital and alleviation of poverty. While physical infrastructure is an important factor of domestic production, the social infrastructure is imperative for human development. A study conducted by Prof Pradeep Aggarwal² reveals that India substantially lag behind other emerging economies in terms of physical as well as social infrastructure. This could be the main cause of India’s slow progress in poverty alleviation. The present study will focus on Education and Health Care Sector which are the main component of Social Infrastructure.

Beside natural resources the most important resource of a nation is its people i.e Human Resource, who plays the most vital role in the infrastructure development and economic growth of a nation. But Human Resource of nation is itself conditioned by two factors that is knowledge base and physical wellness of its people. Here comes the role of the Sovereign, in shaping its Education and Health Care Policies in tune with Constitutional provisions and need-of-the-hour, so that country can boost off its qualitative Human Resource. A look at the international reports with Index of education- health, infra-composite factors reveals following scenario:

- Global Gender Gap Index (GGGI)-2017³ of World Economic Forum(WEF) which covers 144 major emerging economies and measure their GGGI on the basis of gender equality reveals that India slipped 21 ranks and stood at 108/144.
- Global Human Capital Index(GHCI) of (WEF)-2017⁴ aims to capture full human capital potential profile of 5 distinct age groups of a country, India slipped 2 ranks and stood at 103/130.
- Inclusive Development Index (IED) of (WEF)- 2017⁵ is based on key measures of growth and development, inclusion, and inter-generational equity reveals that India ranks 60/103 and stood among 10 emerging economies with advancing trend.
- Finally, Human Development Index (HDI) adopted by United Nation Development Program (UNDP) to measure member countries’ development, is used as a measure of the State of the Economic Growth and Infrastructure Development of a Nation. HDI is

¹ Dr A.P.J Abdul Kalam, Indomitable Spirit website: rajpalsons.com

² Prof Pradeep Aggarwal, *Infrastructure in India: challenges and the way ahead*, Prof Pradeep Aggarwal, Head of RBI unit at Institute of Economic Growth, Delhi

³ Global Gender Gap Report 2p17 of World Economic Forum.

⁴ Global Human Capital Report of (WEF)-2017

⁵ Inclusive Development Index (WEF)-2017

based on composite statistic which includes Education, Life expectancy and Income per Capita as key indicators. The index was discovered in 1990, by eminent Indian economist and Noble Laureate *Dr Amartya Sen* and Pakistani economist *Mahbub-Ali-Haq*. According to Human Development Report⁶ published on 14, September, 2018 - India ranks at 130/189 with a *Medium Human Development Index* of 0.640. Norway stood at the top of the table with HDI of 0.953, while Niger was at the bottom with least HDI of 0.354.

HDI is used to rank member countries into four categories of Human Development index. 58 nations figured in the *Very High Human Development* category mostly from western world. There were 54 countries with *High Human Development Index*. In the category of *Medium Human Development* figured 39 countries including India, while 38 countries were labelled as *Low Human Development* countries on the basis of *Very Low Human Development Index*.

A country secured higher on HDI when the life span due to health care infrastructure/knowledge due to educational infrastructure and GDP per Capita due to sustained economic growth were all higher. The index is based on the human development criteria, whether people are capable of doing desirable things in life for example; are they being well fed, have home or homeless, their state of health, their employment status, their skill learning and education status, voting or not and their participation in community life. The HDI is finally the Geometric Mean of the Life Expectancy Index, Educational Index, and Income Index⁷. This brings the present study close to Health Care Sector and Education Sector and there relevance for Economic Growth through infrastructure development. The study will be focused on Indian context and will include the understanding of the best practices. A comprehensive study of the indicators mentioned above will also be undertaken in the light of their legal aspect.

HEALTH CARE ISSUES, INFRASTRUCTURE AND CHALLENGES

Public Health Care in a welfare state approach is state responsibility, more so in a developing country like India. The issues are endless ranging from sanitation, drinking water, air pollution, Health education to prevention and treatment of disease. Various States in India hold different views regarding issue of Birth control and we have failed miserably in stabilization of our population, particularly in the aftermath of the bitter experience of 1975 emergency, the time of forced sterilization. However the southern states in India could only succeed in adopting appropriate family planning measures, while the northern states still holds anti mind set against family planning. It is pertinent to mention that the southern states of Kerala and Tamil Nadu could successfully reduce the fertility rate to equalize European standards. It was possible due to collaborative efforts and zeal of public representatives, civil servants and medical professionals. Country also witnesses a regional variation in Maternal Mortality rate (MMR)⁸ and to reduce Maternal and infant mortality is a big challenge of

⁶ Human Development Report 2018, UN Development programme, pp 22-25, Sept. 14, 2018

⁷ Human Development Index-Wikipedia

⁸ *Supra note 2*

health care sector in India. In this regard there is a direct relationship between the Health of child bearing mother and Maternal & infant mortality. The legal aspect of this issue in Northern states is primarily related to the early marriage of girls and Boys i.e. before the legal age of 18 and 21. This situation warrants stringent measures to be taken up in the Administration of justice. Malnutrition of mothers often results in the birth of undernourished babies who are prone to disease at birth and even death. There is a dire necessity of professional health manpower in the country both qualitatively as well as quantitatively. Various councils which regulates Medical Education and deals with the registration of practitioners such as Medical Council of India/Dental Council of India/Pharmacy Council of India and Nursing Council of India, etc. needs to be thoroughly revamped. Every now and then we hear about the news of prevailing corruption in these bodies. It is owing to the fact that these Councils were formed by a political process of election and thus corruption became inevitable. Today getting admission in a Dental or Medical college has become highly commercialized, recent example of VYAPUM scandal in the state of MP is an eye opener. It is quite understandable that these Medical professionals, who get into Medical stream by money factor, are destined to rob people with very low skill and poor professional ethics. It also has a deteriorating effect on the health scenario of the nation. The situation warrants a closer eye of law on such bodies and appropriate legislative measure to be taken up so that corruption can be rooted out as an accepted way of life. At the level of government the proposal to set up a National Council for Human Resource in Health (NCHRH)⁹ is a well thought of strategy. The very objective of setting up such umbrella organisation is based on the notion of ensuring the goal of health manpower planning, the standards of prescription, accreditation mechanism and adherence to ethical standards. These goals must be served in an integrated fashion on the lines of best practices. The legal aspect of such a body must be founded on sound democratic practice so that in the event of administrative failure there is recourse to competent Court of law. The Indian Medical Association (IMA)¹⁰ and Doctors fraternity in general are apprehensive about the creation of such a body as they perceive it as an encroachment on their autonomy. It is well known that health manpower planning has been simply ignored and consequently public health has become a low priority. The main issue before the nation is how to overcome the problem of producing adequate number of medical professionals as per the need of primary, secondary and tertiary sector for public as well as private sector. The NCHRH Bill¹¹ is yet to see the light of the day. The legal dimension of health care is of paramount interest to a common man. We need to rapidly build up health care infrastructure in rural areas by taking all round legislative measure for creating institutional mechanism at the district and sub divisional head quarter level on priority basis starting with the most backward districts. The first step in this direction is to come up with a clear cut policy measure to equip and entrust District and sub divisional Hospitals to serve as a nodal centre's for training of paramedical personals to serve in rural areas where health care is lacking as MBBS/BDS doctors are unwilling to serve. This will provide an opportunity to rural youth with 10+2 science background to be trained as a paramedical by

⁹ Available at: <http://www.prssindia.org>

¹⁰ India's health issues & challenges, Available at: <http://www.wikiprogress/>

¹¹ Ibid

the staff and Doctors already available in these Hospitals. Small batches of 50 to 100 depending on the size and needs of the district concerned will serve the purpose.

Today we have more than 640 Districts in India and the number of doctors on roll is not sufficient as per sanctioned strength. Thus there is a problem of retaining good doctors in public health sector in the country. And this is what ailing our health sector the most, therefore a better salary, political non-interference in posting and better job facility is a desired solution for this problem. It is the prime responsibility of a legitimately elected government to ensure that in Health sector, doctors, essential drugs and supporting staff is made available adequately. The transparent and fair process is key to the solution of the problem in health care sector.

ANALYSIS OF BEST PRACTICES IN HEALTH CARE SECTOR

Recently Prime Minister of India Narendra Modi launched the world's most ambitious and all time largest publicly funded government - sponsored healthcare insurance programme, popularly known as PMJAY-Ayushman Bharat¹². It aims at providing healthcare insurance facilities to over 10 crore families covering urban and rural poor. This programme promises to insure 500 million poor people across the country; the scheme offers an insurance cover of Rs 5 lakh¹³. Under the scheme more than 24% household in rural India and 18% in urban areas are targeted to be covered. This scheme is a result of following the best practices in the world as well as realization on the part of government of their welfare state commitment.

No doubt private insurance is a costly affair to fund public health care. Researcher has shown that if we look at the relationship between private insurance and a nation's total health care cost, it reveals a strong positive correlation¹⁴. In other words more a country promotes a scheme of private insurance the more it pays in health care sector, without any extra benefits. In countries like Sweden, Norway, Denmark, Finland and Iceland, it is found that private insurance is either absent or plays an insignificant role in funding health care. Around 9% of GDP of these countries goes in containing their total health care cost. In comparison to this India spends a little over 1% of GDP on health, India's per capita public expenditure on health increased from Rs 621 in 2009-10 to Rs 1112(about 15 \$) in 2015-16. It is very low compared to other countries as Switzerland spends \$6944 on health per capita, while country like USA spends \$4802 and UK spends \$ 3500¹⁵. This picture could change as government of India plans to launch most ambitious National Health Protection scheme (NHPS)-Ayushman Bharath, with an annual health cover of Rs 5 lakh (\$7142= \$1428 per person). Here it is pertinent to mention that most hospitals in Norway and Sweden are government based, there are some private hospitals but all hospitals are they public or private, provide service to public patients at par. Thereby, meaning that there is no differentiation between public and private hospitals unlike the scenario in India. The principle feature of these Nordic systems is

¹² Available at: <http://www.economictimes.indiatimes.com> (Accessed on: 28 Sept. 2018)

¹³ Available at: <http://www.indianexpress.com> (Accessed on: 26 Sept. 2018)

¹⁴ Creating a better health care system: lessons from Norway and Sweden by Ian McAuley, Sept.1, 2014

¹⁵ Available at: <https://www.timesofindia.indiatimes.com>

a judicious blend of the single-payer-national insurance system and co-existence of private insurance with a strong market signal backed by well-structured co-payments.

Health care system of Nordic countries is well known for their commitment to values of equity and social justice. This practice brings these countries in health status like infant mortality at lowest and in life expectancy at highest. The basic element of the health system of these Nordic countries¹⁶ comprises of the following:

- Universal Access - All major political parties continue to be committed to the right of every citizen to receive comprehensive health service,
- Predominately Public Ownership - The service delivery structure remains overwhelmingly public e.g as well over 90% in Sweden,
- Single Source Financing - The focus is on developing a uniform social insurance system,
- Expanded Primary and Preventive Service - Government remain dedicated for continued expansion of primary, preventive and social care service. It also include the recent changes in the financial responsibilities of local political boards i.e emerging municipality-based contracting system. Among the good initiatives in India the Clinical establishments(Registration and Regulation) Act which aims to streamline health care services across the country, ensuring private hospitals do not engage in unethical practices is yet to come in full swing. Health care Sector in India is growing rapidly and by some estimates is at \$78 billion and is expected to grow to \$280 billion by 2020¹⁷. Medical tourism is also an important area of infrastructure development in India to boost its economy growth.

EDUCATION SECTOR, LEGAL PERSPECTIVE

Different Philosopher of Education holds different notion about what Education is about? But in Latin “Education” literally means to “bring up”, which conveys to bring out the hidden potential or talent, within an individual. Education in a broader sense acts as a catalytic input for empowerment of people with skills and knowledge thereby making them a better human being. Education also brings improvement in human capital which is imperative for a productive employment in a society, which is on the path of economic growth and development. It is pertinent to mention here the famous case of *Brown vs Board of Education*, 347 U.S.483 (1954)¹⁸ it was a landmark case in which US Supreme Court held that state laws regarding separate public schools for black and white students were unconstitutional. The Court also made an observation about Education and held that “it is the very foundation of good citizenship; today Education is the principal instrument in

¹⁶ Recent health policy initiatives in Nordic countries by Richard B. Saltman

¹⁷ Available at: <https://economictimes.indiatimes.com>

¹⁸ *Brown v. Board of Education* , 347 U.S.483(1954)

awakening the child to cultural values and grooming him for professional training and in helping him to adjust normally to his environment”.

In the Indian context since time immemorial to discover the latent potential of an individual has been the very essence of Education. India had a “*Gurukul system*” of education in the ancient past and was the center of excellence in the field of education with *Takshila* (700BC) as the first university of the world. Higher education centre flourished at *Ujjain.*, *Nalanda* and *Vikramshila* universities. The present system of education on western lines was introduced by the British on the recommendation of *Lord Macaulay*, which gradually brought the ancient Indian system of education to an end. At present right to education is a fundamental right under Article 21A of the Constitution of India¹⁹. Although, UN convention, Universal Declaration of Human Right²⁰ (UDHR) 1948 and International Covenant on Economic, Social and Cultural Right²¹ (ICESCR) recognised right to education long ago. However Article 46 of the Constitution of India emphasise on the role of state to promote, with special care the Education and Economic interest of the weaker section of the people. In fact Article 330, 332, 335, 338, 342 and the entire V and VI schedule of the Constitution of India²² deals with special provisions for carrying out the objective set forth in Article 46. We know that Constitution of India envisage a federal set up where Education is placed in concurrent list, which makes both centre and states responsible for it. However school education remains with the states while centre only determines standard of higher education and technical education. Under Article 19(1)(g) of the Constitution of India²³, establishing and or running an educational institution cannot be regarded as “trade” or “commerce”. It is in fact the settle position of law and regulatory framework under Indian law. In this regard, following case laws decided by the Hon’ble Supreme Court are important to look at:

- In *State of Bombay v. R.M.D*²⁴ Apex Court held that imparting Education is per se an activity that is charitable in nature.
- In *Unni Krishnan v. State of AP*²⁵ Apex Court was of the opinion that imparting Education cannot be allowed to become commercial in India, with a profit motive.
- In *TMA Pai foundation v. State of Karnataka*²⁶ Apex Court held that the reasonable profit after making investment and expenditure must be utilised for the benefit of the Educational institution. Surplus/profit cannot be utilised for any other use or business purposes. These cases reflect on the true scenario of private run Educational institution and the charitable purpose for which they were created.

¹⁹ Article 21A, Constitution of India

²⁰ Article 26

²¹ Article 13

²² *Ibid*

²³ *Ibid*

²⁴ AIR 1957 SC 699

²⁵ AIR 1993 SC 2178

²⁶ AIR 2002 8SCC 481

EDUCATION SECTOR INFRASTRUCTURE AND ECONOMIC GROWTH

It is well said that the fate of Country depends upon the Education of its people. In today's time the economies are increasingly knowledge based. This makes the role of Education sector even more crucial in improving the human capital which in turn will leads to a better performance of Economy.

In strict economic sense Capital is broadly classified as to include both Physical and Human Capital. Education being the main component of human capital affects economic growth directly as well as indirectly by influencing productivity. The initial stage of schooling is very important in shaping human capital both qualitatively as well as quantitatively, since human capital is basically shaped by Education. Later on training and learning cognitive skills and the state of health of productive group becomes the deciding factor of for the enhanced productivity. There has been a study employing empirical analysis of macro and microeconomic data, which reveals that there is a direct and positive correlation of Education/ Human Capital²⁷with the economic growth of a nation. This is also evident from the fact that more affluent countries are also richer in human capital. There are also studies which show that the countries who improved their educational level by sustained endeavour over a period of a decade, have registered a faster economic growth. A well cited example of this is the Asian Tiger economies of S-Korea, Taiwan, Hong-Kong, Malaysia and Singapore. Though there is a strong correlation between improved educational setup and growth but it does not imply causality. This is due to the fact that improvement in Educational sector and faster growth can also be related to other parameters such as institutional infrastructure, social assets, cultural and geo-factors. Even economic growth may lead to improvement in Education sector due to more investment in Education infrastructure, once indicators like economic growth performance and prospects are favourable.

In our educational sector the greatest challenge is low attendance and a very high dropout rate of students particularly at school level. We need to focus on the basic infrastructure development in education sector on priority basis to contain this problem. In this connection, buildings/classrooms/laboratories/equipment's/play grounds/ basic teaching aids/student-teacher ratio²⁸ etc are the crucial indicators for promoting conducive teaching-learning environment in schools and universities on a long term priority basis. An investment in quality infrastructure is bound to facilitate better teaching and learning and will go in a long way to reduce dropout rate. Research has shown that good facility of educational infrastructure has a direct bearing on learning outcome through three components of light/air quality, stimulation and individualization (flexibility of learning space)²⁹.

Education sector is always cited as a victim of low budgetary provision. Kothari Education commission (1964-66), recommended an allocation of 6% of GDP on Education, which is yet to be achieved. In this connection most of the developed nation, having a more mature

²⁷ Human Capital and Economic Growth, Österreichische National Bank Vienna, 21-5-2007.

²⁸ Education - World Bank Blogs, Jansen Teixeira, 10-3-2017.

²⁹ *Ibid*

Educational system are allocating a budget outlay of 4.5% to 6% of their GDP on Education sector. On the contrary India has decreased its spending on Education sector from 4.4% of GDP to 3.71% in the fiscal year 2017-18. Today India stands at the rank of 143 out of 195 nations in terms of its % GDP allocation on Education. Where most of the rural schools are missing science laboratory and basic infrastructure needed to sustain teaching and learning. Therefore at this stage of economic development we just can't afford to have an adhoc approach regarding infrastructure development and investment in education sector.

LEGAL DIMENSIONS OF INFRASTRUCTURE DEVELOPMENT

Indian economy is a developing economy and our infrastructure is also in a developing phase. In the age of privatisation and globalisation of economy the infrastructure development has also witnessed the entry of private stakeholders in the field of Health care and Education. New trends of build operate and transfer (BOT) mode as well as public private partnership (PPP) mode has also emerged. This situation has led to redefining the role and responsibility of the government in modern time. India being a welfare state is duty bound to look after the welfare of its citizens and therefore cannot shed its responsibility under the plea of private stakeholders being engage in infrastructure development. Our High Courts and Supreme Courts are the custodian of the Fundamental Rights enshrined in Part III of the Constitution of India also known as the Magna Carta of Indian Constitution. Since, defining state was essential to ensure Fundamental Rights which are guaranteed against state as defined under Article 12, in the Constitution of India.³⁰ It was the wisdom of Dr B.R Ambedkar who insisted on the retention of the phraseology of Art 12, so that Fundamental Rights can be claimed against anybody or any authority, exercising power over people. Consequently the wordings of Article 12 were framed in a way to give effect to the needs and aspiration of a changing society. Thus the Constitution of India is a living document as it guides good governance. This is how Indian Constitution was ahead of its time to foresee the challenges to come in time.

There are Courts verdicts where violation of Fundamental Rights can be enforced against private bodies and person and even courts can proceed *Suo-motto* in such cases by applying the test of instrumentality as a function of state in famous case of *Ajay Hasina v. Khalid Mujib & Others*³¹ and later on in *Bodhisattva-Gautam v. Miss Shubhra Chakraborty*³². Thus, a legitimately elected government can't get rid of its duty and responsibility of taking care of public interests and welfare measure irrespective of changed economic policy. This is the main reason for creating a number of regulatory bodies and mechanism by government of India such as University Grants commission, Institute of Charted Accountant, Food safety and standards, All India Council for Technical Edu, Medical Council of India, National Highway authority of India, Pharmacy Council prof India, Indian Nursing Council, Central pollution Control Board, Bar Council of India, Competition Commission of India, Dental Council of India, etc to cater for the need of monitoring Social Infrastructure development in

³⁰Article 12, in the Constitution of India

³¹AIR 1981 SC 487

³²*Bodhisattva-Gautam v. Miss Shubhra Chakraborty*, 1996 SSC (1) 490.

India. These regulatory bodies possess quasi-judicial power, so error Vern state is bound by their verdict. In today's economic scenario private players and the government are very keen to have a binding kind of agreement. However the possibility of PIL or matter landing in courts under such contracts due to disputes is common. This possesses the main threat to infrastructure development provided such litigation is not rationally based on corrupt practices. This necessitates the need for creating awareness to develop a legal perspective of such issues in public domain as well as at the level of stake holders for a vibrant economy to emerge. Finally legal dimensions of economic growth through infrastructure development has to be appreciated in the light of the dynamic interaction among private financiers, Managers, legal experts, government administration, NGO, and public representatives so that a viable mechanism of speedy and unhindered development of infrastructure can be evolved.

CONCLUSION

The physical and social infrastructure of a country decides the fate of its economy i.e good can boost economic growth and poor can retard economic growth. Education and Health are the most important components of Social infrastructure. These two components are imperative for promotion of optimum utilization of both Human Resources as well as physical infrastructure. This in turn leads to improvement in overall economic growth and improvement in the quality of life of the people. The economic advancement of Europe/North America/Japan was possible due to their sustained achievement in human capital. This is the importance of social infrastructure. Therefore, investment in human capital through education, training and health is instrumental in increased output and economic growth. Economic growth theory also envisages human capital as a key indicator of economic growth. No amount of welfare measure can eradicate poverty or help a poor illiterate person except through investment in basic health care and education, whereby he can be enabled to become a more productive and skilled member of society. Thus there is a need for expansion of infrastructure in education and health care sector by sustained improvement of quality, budgetary allocation and good governance. The role of education and health in economic development through investment in human capital is no less than physical means of production. These efforts will go in a long way to meet sustained high rate of economic growth, which in turn will help in elimination of poverty and improvement of human development. In the end it would be most appropriate to quote William J. Clinton who was of the view that it is morally correct and also good economics to advance opportunity of equality and economic empowerment to all, since the factors like discrimination, poverty, and ignorance are the main constraints for economic growth. While investments in education, health infrastructure and scientific & technological research increase it, by creating more employment opportunities and wealth for all. So the time is ripe to usher in an era of new economic growth by making an all-round enthusiastic-collaborative effort in developing social infrastructure by our public representatives, civil servants, medical professionals, educationists and various NGO.

INFRASTRUCTURAL DEVELOPMENT: A DILEMMA OF WELFARE STATE

Jelis Subhan*

INTRODUCTION

Infrastructure¹ is the most vital ingredient of measuring the development of any nation since it is the tool which enables the means to do every activity which ensures the wellbeing of a nation's populace and its growth. The growth of a nation is determined by the prosperity of its citizens both socially and economically. The infrastructure plays the most critical role in the human and economic development of any nation and in fact it is both; social and physical. The social infrastructure influences the human development through better education facilities, better trained and skilled persons and healthier citizens. The education opportunities, health services, skill and human resources development opportunities form the social infrastructure of a society and in that sense for any country whereas the roads, buildings, dams, industries etc. are part of physical infrastructure of any nation. But it remains the social infrastructure which with the contributions from the physical infrastructure ultimately results into the economic growth of any country because the well trained and skilled healthy persons through a better physical infrastructure only can contribute to the prosperity of any nation. The investments in social infrastructure are also termed as 'human capital'. The development wherever one can find or as a matter of fact when the developed countries are taken into account; it is the investment in human capital and development of social infrastructure which brought in the economic development which resulted into the overall development of the country and this includes the worst war-torn nations of Europe. But for development of social infrastructure, the development of physical infrastructure is inevitable; unless a physical infrastructure is created the development in social infrastructure is inconceivable.

The development of physical infrastructure means development of basic requirements such as buildings, transportation, communication, power facilities etc. which highly influences the development of social infrastructure and enhances the economic growth of the country. India among the fastest growing economy of the world requires tremendous focus on such development in infrastructure. This requires focused vision and meticulous planning and which also demand political will and stability. The development of infrastructure is also a most valuable arena of the welfare arm of state and cannot be achieved at a desired pace if only the state undertakes such endeavour therefore it becomes inevitable for the private sector to invest into it or may be a combination of both public and private. In India the 1990s brought in a drastic change in the national economic policy with introduction of liberalisation

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¹ The basic physical and organizational structures and facilities (e.g. buildings, roads, power supplies etc.) needed for the operation of a society or enterprise; Available at: <https://en.oxforddictionaries.com/definition/infrastructure> (Accessed on October 25, 2018)

and an overture towards free market policy. The government realized that to attain economic and social development of the country, the age old socialistic approach demands to be modified and the private sector has to be welcomed in participating in infrastructural development of the country and will thus surely hasten the economic development of the country. The new economic policy envisioned the desired approach by inviting private players for investing in the infrastructural development efforts. But to the larger extent it remained with the state to invest in infrastructural development, be it in the physical or social infrastructure. This may be due to the hugeness of the infrastructural projects related to transportation or power or education or health but communication became an exception where the private sector fared too well in comparison to the public sector contribution. The concern which come to the fore because of infrastructural projects being undertaken are the issues of land acquisitions and the state seemed to be more bent towards a capitalistic approach rather than a socialistic one diluting somewhere the concept of being a welfare state. This paper intends to focus upon the present scenario of infrastructure development in India, the impediments and issues in infrastructural developments and concerns in compensation mechanisms with special reference to the power sector in India.²

THE SCENARIO OF INFRASTRUCTURAL DEVELOPMENT IN INDIA

The Indian economy is one of the fastest growing economies of the world and one of the largest amongst the developing countries. The amount of focus of the government of India towards infrastructure development is reflected in the Union Budget for 2018 – 19 which allocates a whooping Rs. 5.97 Lakh Crores (US\$ 92.22 billion approx.). The required investment in infrastructure is estimated around Rs. 50 Trillion (US\$ 777.73 billion approx.) by the year 2022 to achieve a sustainable development and increasing demand of investments will be witnessed in the areas of roads and highways, power and renewable energy. These areas promise higher valuations and earnings for investors and thus may be construed as one of the most lucrative business opportunities. In India only 24 percent of the National Highway is Four Lane and the demand to develop the remaining 76 percent provides immense business opportunity. Similarly further in transportation segment the government policy of Regional Connectivity Scheme (RCS) offers great opportunity in development of airports. The enhanced momentum from the government to develop infrastructure has already showing results wherein major global giants have started investments in India. Huge investments in the construction development and infrastructure activities has already witnessed heavy increase in Foreign Direct Investments (FDI) which is now amounting to US\$ 24.67 billion (December, 2017) of investment in comparison to US\$ 12.36 billion (April, 2000). The government of India in the kind of policies for instance ‘Housing for All’ and ‘Smart City Projects’ promise to overcome the impediments in investments in infrastructure and to reduce all possible hiccups as it plans to invest around Rs. 2.05 Lakh Crores (US\$ 31.81 billion) in coming years. The pace of development of infrastructure in India is well reflected through the 91 M&A deals worth US\$ 5.4 billion which were made during the year 2017 and the power sector contributed the maximum through 39 M&A

² De, P. and Ghosh, B. 2003 How Do Infrastructure Facilities Affect Regional Income? An Investigation with South Asian Countries, Research and Information System for the Nonaligned and Other Developing Countries

amounting to US\$ 4.4 billion. The private sector which was encouraged by the policies of government of India also responded very positively by participating in most of the infrastructure segment including transportation, roads, airports, power and communication. In India the logistics is attaining an annual growth rate of 10% and by 2019 – 20 will be around US\$ 215 billion. The World Bank's Logistics Performance Index (LPI) ranked India at the 36th position in a list of 160 countries in the year 2016 which was due to an increment of 19 places to the previous year's position. The Agility Emerging Markets Logistics Index in 2018 ranked India at the second position.³ Similarly the foreign investments reported in the construction development sector which includes housing, township and infrastructure building is reported to at US\$ 24.67 billion between April 2000 and December 2017 and US\$ 12.36 billion in Construction (Infrastructure) activities during the same period.⁴ The figures reflect an encouraging scenario of an overall development in infrastructure in India but lacks in the arena of social infrastructure which comprises the education and health sectors. The figures though encouraging but there are many issues which are real hindrances in a faster growth rate, may be statutory provisions and regulations but the issue of land acquisitions remain as the foremost impediment.

ISSUES AND CHALLENGES IN INFRASTRUCTURAL DEVELOPMENTS

The impediments in infrastructure development are multipronged and it ranges from the statutory regulations to constraints of finance to laxity in identification and finalization of projects to land acquisition issues to lack of trained manpower and many unforeseen domestic issues. Firstly, the cumbersome processes involved in obtaining the approvals required at every stage of any project is a major concern and infact at times they are required from multiple levels of government which get entangled in due course because of lack of coordination among various agencies. The resultant standstills badly effect the execution of any project. Similarly, the environmental regulations being at a very nascent stage of evolution impedes the execution of projects due to lack of clarity in concept and procedure. These also involve lacunae on the part of agencies responsible for such regulations and their negligence brings in compliance of further norms which further slow-down the projects. These may be overcome once there is clarity in procedures and guidelines and moreover a better coordination between various agencies which surely comes out of efficient and transparent governance.⁵

Secondly, the financial constraints are major issue which may be due to over expectations from the private sector investments in developing infrastructure. The private sector finds it difficult as the projects are of high capital demands and returns on investments are not instant but time taking. The investments from the private sector are often generated from debts and most of the investors soon become overloaded with such debts and on the other option of

³ Prepared by Agility for ranking emerging countries in terms of their logistics performance; Media sources: DIPP, Aranca Research, Equirius Capital, EY; Available at: <https://www.aranca.com/> (Accessed on: October 25, 2018)

⁴ IBEF June, 2018; Available at: www.ibef.org (Accessed on: October 25, 2018)

⁵ Pradeep Agrawal, Infrastructure in India: Challenges and the Way Ahead, IEG Working Paper No. 350, 2015, Available at: <http://www.iegindia.org/upload/publication/Workpap/wp350.pdf> (Accessed on: October 25, 2018)

raising funds from equity market seems to be less encouraging because of qualms of execution and delayed returns. Again these doubts are more influenced by the regulatory necessities, the unpredictable equity market and to some extent on the fluctuating global economic issues. The issue of financing can be resolved by the better idea of having investments from the Public-Private Partnership model, where the government comes into partnership with the private to finance an infrastructure project but still it remains at a very nascent and evolving stage in India. Another idea may be of foreign corporates who are able to bring in the required funds and technical expertise to execute huge projects but again the impediment is due to cumbersome approval processes and regulatory compliances involved. The answer to this problem is again better coordinated and transparent governance.⁶

Thirdly, the biggest barricade issue is of land acquisition and it is a reality because of which many projects have been stopped or deferred. The causes are primarily the objections of the indigenous people whose lands are acquired for infrastructure development. The reservations of the local communities or the farmers is not without any valid reason, it is the apprehension which has risen among them from the age old system of land acquisitions based on redundant and archaic laws.⁷ The compensations thus given were never satisfying and the mode of calculation of compensations lacked heavily on transparency and the deals always smelled foul. The aggrieved people suffered for decades because of the superfluous promises which were never kept. Many a times the land was acquired forcibly or seemed to be done so under the pretext of some or the other archaic laws by the state. The valuation done by the state for the land so acquired had huge deviations from the original market price and these led to huge number of litigations which further delays the execution of infrastructure projects. The inappropriate and unpleasant rehabilitations of project affected persons also aggravated the distrust of indigenous communities. The age old law; Land Acquisition Act 1894 has been repealed by the Land Acquisition and Rehabilitation and Resettlement Act, 2013 (LARR) and further amended to the new Act; The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation And Resettlement Act, 2013 and further amendment proposed in 2014 and then most recently replacing the ordinance of 2014 via a bill in 2015. The LARR Act promised to resolve all the disputes pertaining to land acquisitions by accommodating a mandatory approval of 80 percent of the landowners for any acquisition and also to compensate in quadruple the current market price of the land. These provisions on the other hand makes more difficult for the corporations to acquire land and also for the investors as the project viability gets influenced.

However, the plight of Land Oustees⁸ and the Project Affected Persons⁹ is far more dreadful than any development of infrastructure or any investment in such projects and its uncertainties' or the economic growth of any nation because any group however minute they are, can never be left in suffering for the benefit of a larger number. The problem is also witnessed because of non-uniformity in such rehabilitation laws among the States and even

⁶ Ibid

⁷ Ibid

⁸ Herein after referred as LOs

⁹ Herein after referred as PAPs

with variety of regulations affecting such acquisitions which are made by different public sector units but uniformity may be once achieved when ‘The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation And Resettlement Act, 2013’ is enforced in its totality. The majority of issues arises from the huge infrastructures majorly coming from the power sector be it a hydro project or a thermal project.

CHALLENGES BEFORE THE POWER SECTOR: A BRIEF OVERVIEW

The study¹⁰ undertaken with the issues relating to the land oustees with the leading power sector giant NTPC Ltd. a Public Sector Maharashtra Company brings forth a newer dimension to the problems that even after the compensations provided as per the regulations of the State and the PSU’s own policies for the rehabilitation of the PAP, the PAP are left with many dissatisfactions which have given rise to numerous ongoing litigations. Though NTPC through its policy declaration affirm its commitments in taking care of all those affected with a comprehensive social outreach programme and a motive to balance infrastructure development with an equivalent emphasis on community development.¹¹ The company enlists and provides for many benefits apart from the monetary compensations to the LOs and the PAPs in the nature of employment in the project, petty contracts, shops allotments in their township etc.¹² The policy document clearly defines the Project Affected Family / Person,¹³ Affected area,¹⁴ Agricultural labourer,¹⁵ Agricultural land,¹⁶ Family,¹⁷ Non Agricultural

¹⁰ A purely doctrinal research where only the secondary sources of information were relied upon

¹¹ NTPC, Initial Community Development Policy, 2009

¹² Rehabilitation and Resettlement (R&R) Policy, NTPC 2010

¹³ (i) A family / person whose primary place of residence or other property or source of livelihood is adversely affected by the acquisition of land for a project or involuntary displacement for any other reason; or

(ii) Any tenure holder, tenant, lessee or owner of other property, who on account of acquisition of land (including plot in the abadi or other property) in the affected area or otherwise, has been involuntarily displaced from such land or other property; or

(iii) Any agricultural or non-agricultural labourer, landless person (not having homestead land, agricultural land, or either homestead or agricultural land), rural artisan small trader or self-employed persons, who has been residing or engaged in any trade, business, occupation or vocation continuously for a period of not less than three years preceding the date of declaration of the affected area, and who has been deprived of earning his livelihood or alienated wholly or substantially from the main source of his trade, business, occupation or vocation because of the acquisition of land in the affected area or being involuntarily displaced for any other reason;

¹⁴ “Affected area” means area of village or locality notified by the concerned State Govt. under Land Acquisition Act-1894 (or equivalent Act) for setting up of NTPC project.

¹⁵ “Agricultural Labourer” means a person primarily resident in the affected area for a period of not less than three years immediately before the declaration of the affected area who does not hold any land in the affected area but who earns his livelihood principally by manual labour on agricultural land therein immediately before such declaration and who has been deprived of his livelihood;

¹⁶ “Agricultural land” includes lands being used for the purpose of:

(i) Agricultural or horticulture; (ii) Dairy farming, poultry farming, pisciculture, breeding of livestock or nursery growing medicinal herbs; (iii) Raising of crops, grass or garden produce; and (iv) Land used by an agriculturist for the grazing of cattle, but does not include land used for cutting of wood only;

¹⁷ “family” includes a person, his or her spouse, minor sons, unmarried daughters minor brothers, unmarried sisters, father, mother and other relatives residing with him or her and dependent on him or her for their livelihood; and includes “nuclear family” consisting of a person, his or her spouse and minor children.

labourer,¹⁸ Requiring Body,¹⁹ Vulnerable persons,²⁰ and all the definitions of tribal community as enshrined under the Indian constitution and affirms to abide by the constitutional provisions in matters related to these communities. The policy document clearly identifies the issues²¹ and outlines the principles and strategies²² to address the rehabilitation and resettlement issues. Most prominently the policy document also envisages a

¹⁸ “Non-agricultural Labourer” means a persons who is not an agricultural labourer but is primarily residing in the affected area for a period of not less than three years immediately before the declaration of the affected area and who does not hold any land under the affected area but who earns his livelihood principally by manual labourer or as a rural artisan immediately before such declaration and who has been deprived of earnings his livelihood principally by manual labour or as such artisan in the affected area;

¹⁹ “Requiring body” means a company, a body corporate, an institution or any other organization for whom land is to be acquired by the appropriate Government, and includes the appropriate Government if the acquisition of land is for such Government either for its own use or for subsequent transfer of such land in public interest to a company, a body corporate an institution, or any other organization, as the case may be, under lease, license or through any other system of transfer of land;

²⁰ Vulnerable persons such as the disabled, destitute, orphans, widows, unmarried girls, abandoned women, or persons above fifty years of age; who are not provided or cannot immediately be provided with alternative livelihood, and who are not otherwise covered as part of a family;

²¹ The land that is acquired for power projects is for a public purpose and necessitates Rehabilitation and Resettlement (R&R) of Project Affected Persons (PAPs), a task often accompanied by socio-economic adjustment. The PAPs have to involuntarily face the new social set up.

The land acquisition and consequent displacement disrupts the traditional social system. The changes in the land use pattern alter the agro-based rural economy and affect the life style of people. This calls for a concerted effort to provide means to ensure sustainable livelihood of these PAPs, considering them as stakeholders.

The Rehabilitation and Resettlement Plan (R&R Plan) is to be formulated so that after a reasonable transition period, the affected families improve, or at least regain their previous standard of living, earning capacity and production levels. In case of a onetime negotiated settlement is reached for individual R&R benefits and paid accordingly at the time of payment of land compensation itself, or in cases of projects, not requiring any land acquisition Community Development (CD) plan will be prepared under the R&R Plan in consultation with stakeholders thru VDAC or any other consultative mechanism in force.

NTPC's involvement in the R&R activities will continue until such time as NTPC has taken all actions in accordance with R&R Plan, preparation of Implementation Completion Report (ICR) and evaluation of activities post completion thru the conduction of Social Impact Evaluation (SIE) preferably thru an outside agency.

This policy aims at setting up broad guidelines for the formulation of project specific R&R Plans as per the culture/project specific requirements of each project, the categories and the entitlements of R&R benefits.

²² NTPC believes that the most effective way of addressing the R&R issue is through a proactive approach and an appropriate planning of land acquisition. Towards this, NTPC will adopt the following principles and strategies:

Minimise the land requirement though compact and efficient layout of plant, township and other facilities. Multi storied facilities like township etc. will be planned wherever possible to reduce the land requirement.

Minimise the acquisition of prime agriculture land and other assets to the extent possible and avoid acquisition of the homestead. This will be one of the principal criteria in selecting a site among the techno-economically feasible alternatives and for finalising the boundaries / layout of project including plant, township and other facilities.

All PAPs residing in, working, doing business or cultivating land or having rights over resources within the project area as per the categorization and provisions for eligibility in the policy are entitled for compensation for their lost assets as per the law of the land and for other R&R benefits as per livelihood loss as per categorization detailed in this policy, sufficient to assist them to improve or at least regain their previous standard of living.

commitment to transparency²³ in all the dealings and also includes provisions for consultations²⁴ with the indigenous communities and ensures various researches and impact assessments before embarking on any new project.²⁵²⁶²⁷ Apart from these measures the company also proposes to involve NGOs and other bodies from time to time to evaluate the ongoing rehabilitation and resettlement processes and also to proactively take measures to ensure the well-being of the affected people.

However, the beneficial and proactive provisions the company has declared through its policy paper it has witnessed many aggrieved people and communities and it has led to many agitations, demonstrations and finally many litigations. There have been continuous efforts from the management of company but like other similar huge infrastructure projects the litigations and dissatisfaction persists. The causes for these dissatisfactions may be some lacunae or negligence in implementation of the policies envisaged in the policy document or there is infact a lack of understanding of the issues persisting with the indigenous community or insufficient valuations and also politicalized instigations for vested interests cannot be denied. The coming into force of The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation And Resettlement Act, 2013 by which uniformity in compensations and dispute resolution mechanism also with flexibility in case to case basis but with transparency seems to be the only way ahead.

CONCLUSION

The issue which acts as detrimental to the crucial demand of developing infrastructure in India seems to be more focused around the issues of the project affected persons may it be the

²³ One important aspect in addressing the R&R issues is of maintaining total transparency in planning and implementation of an activity related to PAPs. Therefore, consultation and participation of PAPs and their representatives along with proper documentation will be encouraged to ensure transparency and a conducive environment of fairness, trust, confidence and co-operation in arriving at a settlement preferably through broad consensus among majority or thru consultative mechanism like VDAC/District Administration etc.

²⁴ For this, NTPC will share information and carryout consultations though formal mechanism of Public Information Centre (PIC) and Village Development Advisory Committee (VDAC) or similar consultative mechanism during the implementation of R&R Plan. This will be supplementary to the set up proposed by NRRP-2007. Informal consultations and participation will also be carried out through Community Based Organisations (CBOs), Non-Government Organisations (NGOs), Clubs engaged in social activities etc. After implementation of R&R Plan, sharing of information will be carried out through the neighbouring village panchayats/ local newspapers.

²⁵ Whenever it is desired to undertake a new project or expansion of an existing project, which involves involuntary displacement of four hundred or more families enmasse in plain areas or two hundred or more families enmasse in tribal or hilly areas, DDP blocks or areas mentioned in the Schedule V or Schedule VI to the Constitution, a Social Impact Assessment (SIA) along with Environment Impact Assessment (EIA) will be carried out in such manner as may be prescribed. Guidelines on the same as and when prescribed by the Government will be followed. Alternately the EIA will continue to cover the Social aspects as well as per the existing practice.

²⁶ A Socio Economic Survey (SES) will be conducted by a professional agency to collect detailed demographic details of the area and which shall form the basis for the preparation of R&R Plan. In case the SIA is done separately than the EIA, need for conducting SES as well could be re-examined.

²⁷ A Social Impact Evaluation (SIE) will also be undertaken after the completion of R&R Plan to evaluate the impact of the R&R program.

land oustees or the internally displaced population. The preamble of The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 provides for a proactive and very socialistic approach which the Act proposes and the legislative intent surely seems to resolve all the issues pertaining to the land acquisitions for all kind of projects and definitely seems to be an answer.²⁸ The Act provides provisions for land acquisitions by the government for its own projects, land acquisitions for projects based on Public-Private-Partnership²⁹ model and even where the land is acquired by the government for providing it to a private entity for any project.³⁰ The provisions provide for all the

²⁸ An Act to ensure, in consultation with institutions of local self-government and Gram Sabhas established under the Constitution, a humane, participative, informed and transparent process for land acquisition for industrialisation, development of essential infrastructural facilities and urbanisation with the least disturbance to the owners of the land and other affected families and provide just and fair compensation to the affected families whose land has been acquired or proposed to be acquired or are affected by such acquisition and make adequate provisions for such affected persons for their rehabilitation and resettlement and for ensuring that the cumulative outcome of compulsory acquisition should be that affected persons become partners in development leading to an improvement in their post-acquisition social and economic status and for matters connected therewith or incidental thereto.

²⁹ Hereinafter referred as PPP

³⁰ Section – 2 (1) The provisions of this Act relating to land acquisition, compensation, rehabilitation and resettlement, shall apply, when the appropriate Government acquires land for its own use, hold and control, including for Public Sector Undertakings and for public purpose, and shall include the following purposes, namely:—

(a) for strategic purposes relating to naval, military, air force, and armed forces of the Union, including central paramilitary forces or any work vital to national security or defence of India or State police, safety of the people; or

(b) for infrastructure projects, which includes the following, namely:—

(i) all activities or items listed in the notification of the Government of India in the Department of Economic Affairs (Infrastructure Section) number 13/6/2009-INF, dated the 27th March, 2012, excluding private hospitals, private educational institutions and private hotels;

(ii) projects involving agro-processing, supply of inputs to agriculture, warehousing, cold storage facilities, marketing infrastructure for agriculture and allied activities such as dairy, fisheries, and meat processing, set up or owned by the appropriate Government or by a farmers' cooperative or by an institution set up under a statute;

(iii) project for industrial corridors or mining activities, national investment and manufacturing zones, as designated in the National Manufacturing Policy;

(iv) project for water harvesting and water conservation structures, sanitation;

(v) project for Government administered, Government aided educational and research schemes or institutions;

(vi) project for sports, health care, tourism, transportation or space programme;

(vii) any infrastructure facility as may be notified in this regard by the Central Government and after tabling of such notification in Parliament;

(c) project for project affected families;

(d) project for housing for such income groups, as may be specified from time to time by the appropriate Government;

(e) project for planned development or the improvement of village sites or any site in the urban areas or provision of land for residential purposes for the weaker sections in rural and urban areas;

(f) project for residential purposes to the poor or landless or to persons residing in areas affected by natural calamities, or to persons displaced or affected by reason of the implementation of any scheme undertaken by the Government, any local authority or a corporation owned or controlled by the State.

measures including researches and impact analysis and everything which can be demanded and expected from such a crucial and benevolent legislation to some extent. But still the hesitations remain for its success and it can only be assessed once the Act is enforced to the desired extent and actual implementation is made. The future acquisitions and the ongoing issues will definitely be regulated by the Act and then only the impact can be evaluated, so it seems to wait till the time comes.

Moreover, as a matter of suggestion firstly it is required to strengthen the process of arbitration and conciliation in matters of disputes in the infrastructure development sector whether it may be between the corporate and the State or between the corporate and the aggrieved person/s or any other entity. Secondly if the PPP model is promoted than why not involve the indigenous people as partners and not as merely LOs or PAP or internally displaced people?

(2) The provisions of this Act relating to land acquisition, consent, compensation, rehabilitation and resettlement, shall also apply, when the appropriate Government acquires land for the following purposes, namely:

(a) for public private partnership projects, where the ownership of the land continues to vest with the Government, for public purpose as defined in sub-section (1);

(b) for private companies for public purpose, as defined in sub-section (1):

Provided that in the case of acquisition for—

(i) private companies, the prior consent of at least eighty per cent, of those affected families, as defined in sub-clauses (i) and (v) of clause (c) of section 3; and

(ii) public private partnership projects, the prior consent of at least seventy per cent. of those affected families, as defined in sub-clauses (i) and (v) of clause (c) of section 3,

shall be obtained through a process as may be prescribed by the appropriate Government:

Provided further that the process of obtaining the consent shall be carried out along with the Social Impact Assessment study referred to in section 4:

Provided also that no land shall be transferred by way of acquisition, in the Scheduled Areas in contravention of any law (including any order or judgment of a court which has become final) relating to land transfer, prevailing in such Scheduled Areas

(3) The provisions relating to rehabilitation and resettlement under this Act shall apply in the cases where,—

(a) a private company purchases land, equal to or more than such limits in rural areas or urban areas, as may be prescribed by the appropriate Government, through private negotiations with the owner of the land in accordance with the provisions of section 46;

(b) a private company requests the appropriate Government for acquisition of a part of an area so prescribed for a public purpose:

Provided that where a private company requests the appropriate Government for partial acquisition of land for public purpose, then, the rehabilitation and resettlement entitlements under the Second Schedule shall be applicable for the entire area which includes the land purchased by the private company and acquired by the Government for the project as a whole.

ROLE OF PUBLIC-PRIVATE PARTNERSHIP IN INFRASTRUCTURAL DEVELOPMENT PROJECTS: AN INDIAN PERSPECTIVE

Prashant Rahangdale *

Abstract

Infrastructure is an important sector wherein all the countries need to work a lot to achieve overall development. India being developing country is working rigorously in the field of infrastructural advancement. However, lots of recourses are required to full fill the wants of individuals residing in any country and due to inadequate way outs sometimes targets are not achieved by the governments. To resort this setback various countries are adopting the innovative practices by adopting Public - Private Partnerships which is also called as PPP model or P3 model. Public - Private Partnerships is a novel idea through which public and private come together to develop infrastructural projects. Private sectors not only contribute their skills and experience but also finance the public sectors in infrastructural development projects. India has also followed this practice and adopted PPP model in sectors like road, transports, logistics hubs, Health Care and Education Sector. This research paper will focus on the study the role of Public-Private Partnership in Infrastructure Projects in India. Further, the study will also focus on advantages and disadvantages PPP model in infrastructural development projects.

Keywords: *Infrastructure, Public - Private Partnerships, Economic Growth etc.*

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INTRODUCTION

Infrastructure is an important sector wherein all the countries need to work a lot to achieve overall development. India being developing country is working rigorously in the field of infrastructural advancement. However, lots of recourses are required to full fill the wants of individuals residing in any country and due to inadequate way outs sometimes targets are not achieved by the governments. To resort this setback various countries are adopting the innovative practices by adopting Public - Private Partnerships which is also called as PPP model or 3P model. Public - Private Partnerships is a novel idea through which public and private come together to develop infrastructural projects. A well-established PPP model may become one of the most efficient tools for Governments to ease private sector in infrastructure development. PPP models are durable association between a private entity and the government which may provide financial assistance, knowledge sharing and manpower under a single roof. Private sectors not only contribute their skills and experience but also finance the public sectors in infrastructural development projects. For large scale projects it always advised to adopt PPP model to decrease the burden of government. The arrival of PPP model can be seen in early 1980s, when the governments of developed nations like England and America achieved great success through privatization in sectors like power, telecom and sanitation, transportation, education and health.

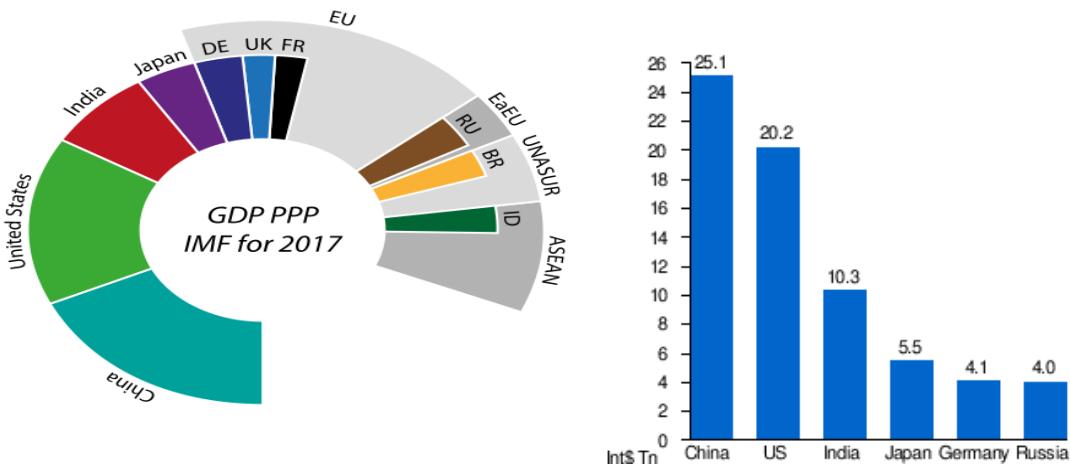
Thought the glimpse public - private partnerships can be seen in post-independence period but the actual PPP campaign can be adjudged in 90s. Government had allowed public - private partnerships in various sectors of economy like power generation, telecom sector, road transport and education. The mid phase from 1990s to 2004 noticed the beginning of PPP model which initially focused on transport and power sectors. However, the success rate was low due to dearth of an effective 3P policy. Learning from past experiences during 2004-12 government framed an efficient policy on PPP model by setting guidelines and standardized document for 3P projects by which Indian infrastructural sector experienced boom in of PPP projects.

As per the recent data of Ministry of Finance, 1,529 PPP projects [Total project cost (in Rs Crore): 1,048,641.22] have been awarded so far in India¹. Out of these, about 50% are currently in operational stage, while others are either scrapped or are under different stages of implementation. Sector-wise break-up shows that transport sector accounts for 58% of the these projects, followed by energy sector with 24%, while social and commercial infrastructure sector accounts for 9% and water & sanitation for the balance 8%². Largest economies by PPP GDP in 2018 according to International Monetary Fund estimates are described in below figures:

¹ Available at:

[https://www.pppinindia.gov.in/infrastructureindia/projectlist?id=1&searchType=Government%20Infrastructure%20Projects%20\(PPP\)](https://www.pppinindia.gov.in/infrastructureindia/projectlist?id=1&searchType=Government%20Infrastructure%20Projects%20(PPP))

² Available at: <http://www.niti.gov.in/content/rebooting-public-private-partnership-india>



Source: IMF

However, large number of infrastructural projects failed in India to start during aforesaid period due to deficient PPP favorable environment, scarcity of credit from unconventional sources, paucity of effective dispute resolution system. Moreover, due to federal structure of governance and nonexistence of uniform National policy and legal framework PPP in India remains diverse. As per Indian scenario the researcher has found that the only about 32% of the infra structural projects are implemented by the Government of India or its entities, whereas the rest are implemented by the State governments. Therefore, the success of PPP model rest on efficient State level policy and governance framework.

ADVANTAGES AND DISADVANTAGES OF PUBLIC - PRIVATE PARTNERSHIPS

A Public-Private Partnership is a pact between governmental entities and private sector units. Though, this is an agreement, but it had developed a platform wherein Government and private sector can come together to build up nation. It not only shares financial assistance but also knowledge and manpower under a single roof to develop infrastructural projects. In addition to this each of them shares the impending risks and plunder in the release of the public service or facility. The success of PPP model can only be adjudged by the achieved targets, greater benefits by using optimal resources and on road results. The researcher had gone through various PPP policies and adjudges its advantages and disadvantages which are recited below:

ADVANTAGES

- Sharing the risk
- Minimizing the governmental role
- Decrease of the political influence in economy
- Comprehensive problem solving
- Sharing of funds.
- Faster completion of huge projects
- Reallocating funds
- Constant cash flow

- Quicker execution of a project
- Possibility for multiple uses of the facilities.
- Possibility for smaller investments
- Possibility for conducting other public
- Large investments
- Savings to the budget
- Transfer of new technologies between both
- More competition on market
- Guarantee of the services for a longer
- More transparency in the economy

DISADVANTAGES

- Limited influence of public authority over the investment
- Increase of the prices charged to the users of the infrastructure
- Reduction of bargaining position of public authorities
- High transaction costs
- Poorer quality of the services
- Limited accessibility to services
- Decrease of employment in the public sector
- Financial risk for public partner
- Opportunity risk for public partner
- Political risk for private partner
- Higher transaction cost
- Lack of coordination
- Inefficiencies due to lack of contestability and competition
- Culture Gap between both the entities
- Corruption may increase
- Political and Legal Problems

SUGGESTIONS AND RECOMMENDATIONS

India has adopted PPP model to boost up infrastructural growth. As the system was new, initially there were few lurches, however, slowly when the model got adapted with the Indian scenario, it enhanced the infrastructural development. The success rate of PPP model majorly depends upon the optimal use of resources, sustainable development, risk allocation, sharing of trust environment among public private partners and effective legal framework. There are few suggestions which are recommended by the researcher pertinent to his research.

- Transfer of risk is an important feature of PPP model, however, it is suggested that the risk should be transferred among those entities that came best tackle it.
- The government should be clear with its goals and perspectives to avoid damage.

- Government should adopt such a system wherein there is lack of political interference.
- There should be a healthy competition among the stakeholder.
- Government should set up a nodal agency to adopt best practices in PPP model.
- There should be an effective Legal framework to resolve the dispute among stakeholders.

CONCLUSION

Infrastructural development is a need of growing economy. To boost up the economy PPP model is not only a want but has become a need. There may be n number of risks in 3P model but it had tried to achieve the pinnacle in infrastructural growth. India being mixed economy required a system of partnership between public and private sector. It is not only cost effective but also shares the risks. For a long term investment, PPP model can help a lot. The desired level of growth can be achieved through PPPs. The same was said by our Prime Minister, Shri Narendra Modi, "*The Government has no business to do business*" and thereby promote private sector investments and participation towards the nation building. To make PPP model more effective, government should undertake to implement Kelkar Committee's Report³ to set-up of national level PPP institution, a dedicated PPP tribunal, and a formal framework for post award contract renegotiation. Following these recommendations PPP Model can achieve its success.

³ Available at:

http://www.prsindia.org/administrator/uploads/general/1451885505_Report%20Summary%20%20Kelkar%20Committee%20PPP.pdf

DEVELOPMENT OF AVIATION INFRASTRUCTURE: AN AIRWAY TO A BETTER ECONOMY

Safia Tarannum Quraishi & Swapnil Pattanayak ***

Abstract

For a country to have a rapid economic growth, substantive human development and reduction in the poverty level, a robust social and physical infrastructure is essential in the blueprint of its development. Air transport has customarily experienced a higher growth rate than most other industries. Air transport is a leading force in the growth of the economy as the demand for air transport is closely linked with economic development. The development of infrastructure for the aviation industry thus plays a decisive role in helping the economy grow altogether. Both the civil aviation sector and the cargo sector have witnessed a major rise as everyone is looking out to update their lifestyle.

In the light of the importance of the role of infrastructure in the economic development of any country, the paper will seek to study and try to build on a comparative analysis in the development of infrastructural components in civil aviation and cargo aviation industry in India. These will be reflected upon as the paper will precede further drawing from the implemented laws and government policies, for civil and cargo aviation, in practice in the developed countries. Assessing the challenges in the infrastructure of transport industries with special emphasis on aviation sector, the author(s) will discuss the possible solutions that may be useful in addressing these challenges to further the cause of the exponential growth of economy in India.

Upon exploring these issues, the paper will conclude with specific suggestive measures that, if incorporated properly, can push India a step forward towards reaching the status of an emerging superpower.

Keywords: *Infrastructure Development, Aviation Industry, Economic Growth, Civil Aviation and Cargo Sector, Challenges and Solutions.*

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INTRODUCTION

Infrastructure development is a *sin – qua – non* for the development for the economy of the country. Infrastructure is the basic physical and organizational structures and facilities needed for the operation of a society or enterprise.¹ Infrastructure is needed to ensure that the country's operations continue to work and systems remain functional. A better infrastructure is crucial for the economic rapid growth, economic rapid development and poverty reduction.

Once standards are made mandatory and adopted, the next phase in reducing risk is ensuring that they are implemented properly. When developing infrastructure, there are four broad stages to conform with:

- a. Planning - This comprises submission of an application to the authority where the application consists of details of who will do the work and how.
- b. Design - This contains a review to check all requirements are met and the authority is satisfied. This is the first compliance check and it covers regular on – site inspections.
- c. Construction - Inspection by external experts are crucial at every stage. A final certificate of compliance can be issued following a successful final inspection, to certify compliance of construction.
- d. Installation and Commissioning - It involves installing the safety features as per the respective requirements, and only if these guidelines are met, shall the infrastructure be commissioned for use.

Transport is an essential factor in infrastructure development. It provides for the necessary services essential for promoting the same. The transport sector has shown immense growth and even promises to grow further. The government must prioritize transport planning and development while allocating the budget as it forms the backbone of the economy as a whole. The objective must circle around the progress of various transport modes in such a style which leads to the realization of an efficient, sustainable, safe and balanced transport system.

Aviation is crucial for quick and efficient development of trade and tourism and has a strong multiplier effect on various other sectors in the economy. As India moves forward to be the third largest civil aviation market by the end of 2030, it faces multiple challenges in terms of infrastructural constraints. There is a need to build more airports especially in smaller cities, including more in the North-Eastern and remote regions, for better connectivity and incentivising connectivity. The recent budget has addressed several of these problems, and new Civil Aviation Policy and related measures are designed to achieve it.²

Civil aviation includes air transport (commercial carriage by air), non-commercial flying (such as private flying), commercial non-transport, infrastructure and manufacturing. Air transport is the lead constituent of civil aviation. Air transport has traditionally experienced

¹ Available at: <https://en.oxforddictionaries.com/definition/infrastructure>

² Ministry of Civil Aviation (MoCA) Annual Report and Data

higher growth than most other industries. Demand for air transport is closely linked with economic development and at the same time air transport is a driver in an economy. The contribution of air transport and related civil aviation industries to local, regional or national economies includes the output and jobs directly attributable to civil aviation as well as the multiplier effect upon other industries throughout the economy.

The Indian air cargo segment has been attracting more international cargo operators to country in terms of services, joint ventures, stake holdings etc. The growing cargo volumes, no Indian all cargo or freighter operator, conducive policy and lenient regulatory environment all put together makes it a profitable market for the international players.³ In 2017, India launched the UDAN scheme under the Regional Connectivity Scheme (RCS). The cargo segment also had placed its bet on the RCS scheme expecting the cargo lifts through smaller airports to the larger ones. However, the cargo segment has not taken off as planned. The demand for air cargo transportation has increased significantly over the last few years, because product life cycles have shortened and demand for rapid delivery has increased. In such a changing business environment, where speed-to- market is a competitive imperative, movement of inventory is no longer viewed as a compartmentalized process.

The needs of infrastructure are humongous- over a trillion dollars over the next 5-7 years. Besides funding from the own budgetary resources, Government is tapping all other possible avenues including loans from World Bank, FDI, pension and insurance funds, private capital under PPP, etc. The Government has set up National Investment and Infrastructure Fund, as announced in the Union budget 2017-18, with a proposed corpus of INR 40,000 crore, which may be raised from time to time. The Government's share in the corpus will be 49 percent, the balance 51 percent raised from strategic anchor partners. This would help in leveraging resources from public as well as private sector and augmenting equity flow to infrastructure projects.⁴

LEGAL REGIMES

Law is the basic need of the society and in the absence of the contrary, the consequences amounts to disorganization in the society. In the aviation sector, the system of law and order is equally important as aviation sector is an aspiring sector enhancing the economy and playing the role of a catalyst for growth in upcoming years especially for a developing country like the Indian subcontinent.

Aviation law is the branch of laws that govern the legalities and business aspects of flight and air transport, such as air traffic rights, aviation safety and security, economic regulations of airlines, and the operation of flights. The primary role of aviation law is to provide an agenda that keeps the aviation industry safe, reliable, fair and efficient.

Two major statutes in the Indian Scenario which take care of the Indian Aviation Sector are ,

³ The Strat Trade Times, *India, the new destination for air cargo*

⁴ Dhanendra Kumar, *Development of Infrastructure in India – The Vehicle for Developing Indian Economy*, Vivekanand International Foundation.

The Air Corporation Act, 1953 and the Airport Authority of India Act, 1994.

The Air Corporation Act, 195⁵, nationalised all air transports and provided for the establishment of the Air Corporations to facilitate the acquisition of existing airline companies and make better provisions for the operations of air transport services in the country. The Act provided for the establishment of two corporations, viz., *Indian Airlines* and *Air India International*.

Where the latter supervised the international routes of the country, the *Indian Airlines* was formed by merging eight domestic airlines which were operating in the country, at that time. They were *Air India*⁶, *Deccan Airlines*⁷, *Airways India*⁸, *Bharat Airways*⁹, *Himalayan Aviation*¹⁰, *Kalinga Air Lines*¹¹, *Indian National Airways*¹², and *Air Services of India*¹³. The Air Corporation Act, 1953, gave monopoly power to the Indian Airlines to operate on domestic scheduled services ruling out any other operator. Accordingly, Air India International became the sole carrier to operate on International flights except flights to some neighbouring countries, which were given to Indian Airlines.¹⁴

The Airports Authority of India Act, 1994¹⁵ is the Central legislation enacted with the intent to establish an airport authority as well as to transfer and vest the activities of International and National Airports Authority of India with the Indian Airports Authority so created for advanced management and consistent administration of airports along with civil enclaves in the manner of services rendered by air transport. It is an Act to provide for the constitution of the airports Authority of India and for the transfer and vesting of the undertakings of the International Airports Authority of India and the National Airports Authority to and in the Airports Authority of India so constituted for the better administration

⁵ In March 1953, the Parliament passed the Air Corporations Act which was recorded in the statute book with the assent of the President of India on May 28, 1953. The newly created public undertaking took over and launched its actual aviation operations from August 1, 1953.

⁶ Originally started as Tata Air Services, then later renamed to Tata Airlines and on 29th July, 1946, it was renamed as Air India.

⁷ Deccan Airways was founded in 1945, jointly owned by the Nizams of Hyderabad and the Tatas and its first flight began in 1946.

⁸ It was nationalised and merged into Indian Airlines in 1953.

⁹ *Supra note 8*

¹⁰ Himalayan Aviation was an airline based in India that operated in the northern parts of the Indian Subcontinent until its nationalization and merger into Indian Airlines in 1953.

¹¹ Kalinga Airlines was a private airline based in Calcutta, India. The airline was nationalised and merged into Indian Airlines in 1953. It restarted operations as a non-scheduled charter operator in 1957 and flew passengers and cargo until 1972.

¹² Indian National Airways was an airline based in Delhi. In 1953, the Indian National Airways was nationalised and merged into Indian Airlines.

¹³ Air Services of India was a private airline based at Juhu Aerodrome in Mumbai, in India. The airline was merged into the [Indian Airlines](#) Corporation in 1953.

¹⁴ Available at: <https://www.indiatoday.in/education-today/gk-current-affairs/story/indian-airlines-nationalisation-day-air-india-august-1953-air-corporation-act-1302436-2018-08-01>

¹⁵ Airports Authority of India (AAI) was constituted by an Act of Parliament and came into being on 1st April 1995 by merging erstwhile National Airports Authority and International Airports Authority of India.

and cohesive management of airports and civil enclaves whereat air transport services are operated or are intended to be operated and of all aeronautical communication stations *for the purposes of establishing or assisting in the establishment of airports* and for matters connected therewith or incidental thereto.

The *prima facie* motto of both the statutes are:

- ensuring the safe design of aircraft, engines, and components,
- establishing navigational aids,
- maintaining aircraft and equipment,
- licensing pilots and aircraft maintenance technicians,
- certifying airports,
- Issuing standards for air traffic control.

POLICIES

NCAP (National Civil Aviation Policy)

The cornerstones of the new policy are competition, consumers, connectivity and investment (both domestic and foreign). Its vision is to make flying affordable and convenient and pave for significant growth in the civil aviation sector. Further stated aims are as follows:

- To improve ease of doing business through simplified procedures, deregulation and e-governance
- To achieve 30 crore domestic ticketing by 2022 and 50 crore by 2027. Similarly, to increase the international ticketing to 20 crore by 2027 and cargo.
- To increase the domestic passenger traffic by four-fold to 300 million by 2022.

Safety and Security

There are no improvements made in the policy in improving regulatory and policy-making competence. The policy is silent on professionalizing the crucial entities that govern aviation safety and security in the country like the Directorate General of Civil Aviation (DGCA) and Bureau of Civil Aviation Security (BCAS). Though it aims to strengthen these entities, it has not laid down any framework to make these organizations capable of meeting modern-day challenges and to be process-driven to deliver world-class service. With ever increasing growth in the number of passengers, the country needs strong air safety and security regulators.

AAI and Infrastructure Plan

The new policy is also silent on the need for complete transformation of the Airports

Authority of India (AAI). India's ambitious airport infrastructure development plan requires a strong organization to carry out the implementation. But there is little clarity in the fate of AAI or about its listing in the stock exchanges. Experts opine that AAI focuses heavily on capital expenses. Adding to the woes, the expected rise in helicopter operations, private flying and regional airlines is likely to add to the pressure.

The Way Forward

Aviation experts want the government to separate Air Navigation Services from the AAI and establish it as an independent, professional body. They also feel the policy has lots of ifs and buts involved. They want the policy to be coherent, fair, equitable and implementable. In addition, the industry stakeholders have to actively engage with the policy makers to implement the rational decisions to boost the growth of civil aviation sector.

Even with 40% upwardly mobile middle class, India's aviation industry remains largely untapped with promising potential. Framing right policies with special focus on quality, cost and passenger interest can make India to achieve its vision of becoming the third largest civil aviation market by 2020 and largest by 2030.¹⁶

UDAN (Ude Desh ka Aam Nagrik) / (Let the common citizen of the country, fly)

UDAN (Ude Desh Ka Aam Nagrik) is the Government's initiative to make air travel to India's tier II and tier III cities affordable to the *aam aadmi*. The idea is to put smaller cities and remote regions on the aviation map, by getting domestic airlines to ply more regional routes. Under the scheme, the Government offers incentives to airlines to flag off new flights to neglected smaller cities and towns by providing Viability Gap Funding to make these operations profitable. Airlines are required to bid for exclusive rights to fly on the regional routes opened up under the scheme. They must sell a specific number of seats on each flight at a fixed fare of ₹2,500 for one hour of flying. In the case of helicopter operations, allowed for the first time now, fares are capped at ₹2,500 for a 30-minute flight.

Its importance

After the second round of bidding in UDAN, air travellers can now fly with known names such as Jet Airways, IndiGo and Pawan Hans to far-flung places. In all, 109 regional airports and heliports have been connected.

The second round saw several tier 2 and tier 3 cities such as Kargil in J&K join the network. Besides these airports, 14 helipads in Uttarakhand, eight in Arunachal Pradesh, six in Himachal Pradesh, five in Manipur and four in Assam have been pressed into service in UDAN 2, making it easier for people in these regions to fly to other cities.

This should happen within six months as operators have to start services within this time-frame after the award of contract, subject to the Airports Authority of India getting the

¹⁶ Available at: <https://www.gktoday.in/gk/national-civil-aviation-policy-2016>

airport/heliport ready. The scheme gives India's aviation sector a boost by giving a chance to small and first-time operators to be a part of the rapid growth in passenger traffic. These two rounds of bidding have seen newer players such as Heritage Aviation, Maritime Energy Heli Air Services, Turbo Aviation, Zoom Air and Pinnacle winning bids to operate flights. Robust regional connectivity is also expected to deliver an economic boost to the remote locations that make it to the country's new aviation map.¹⁷

POLICIES AND ON-GOING PROJECTS ON AIRPORT INFRASTRUCTURE

Greenfield Airports

Government of India has granted site clearance to DMIDC (project proponent) for setting up of a Greenfield Airport for public use near Bhiwadi in Alwar district of Rajasthan. The government has granted *in-principle* approval to 13 projects: Mopa in Goa, Navi Mumbai, Sindhudurg and Shirdi in Maharashtra, Bijapur, Gulbarga, Hassan and Shimoga in Karnataka, Kannur in Kerala, Dabra in Gwalior, Pakyong in Sikkim, Kushinagar in Uttar Pradesh and Karaikal in Puducherry.

A view on setting up of Greenfield Airport at Jewar will be taken after receiving a complete updated proposal from the Government of Uttar Pradesh. Government of Uttar Pradesh is responsible for further progress in the project as necessary action for approval from various departments, project development, including financing of the airport project has to be obtained by the respective airport promoter.

This information was given by the Minister of Civil Aviation Shri Ashok Gajapathi Raju Pusapati in a written reply to a question in Rajya Sabha.¹⁸

Air Cargo Industry

With Indian aviation market going through a transformational phase, backed by the huge opportunities in the air cargo industry, government and industry stakeholders have realised the need for infrastructure development focusing on providing quick and sophisticated services to sustain increasing air cargo volumes.

As India is to become world's third largest aviation market by 2020, developing infrastructure along with addressing the needs of the air cargo industry has been the top priority for the aviation ministry. But is India's aviation infrastructure prepared to sustain air cargo industry's immense future growth? It is important for the government to scrutinize the areas of development and set up working groups to study new opportunities in this sector. The logistics industry has always been confronted with multitude of problems on account of inordinate dwell times, damaged or missing cargo, long processing times and queues at the cargo terminals, etc. This has led to huge transaction cost and operating expense for the air cargo industry players. Therefore, the government's main focus initially is to reduce dwell

¹⁷ Available at: <https://www.thehindubusinessline.com/opinion/columns/slate/all-you-want-to-know-about-indias-udan-scheme/article22563182.ece>

¹⁸ Available at: <https://www.ibef.org/archives/detail>

time to match with international standards through automation, e-governance, air freight stations (AFS) and simplified processes.

HEADING TOWARDS REFORMS

Legal Regime in context of aviation infrastructure of developed countries: Australian aviation infrastructure regime.

The principal benefits according to the regime that the Australian aviation infrastructure sector exercises, are created for the customer, the passenger or shipper, using the air transport service. In addition, the connections created between cities and markets represent an important infrastructure asset that generates benefits through enabling foreign direct investment, business clusters, specialization and other spill-over impacts on an economy's productive capacity.

Aviation's economic footprint:

Major Employer

- 149,000 jobs directly supported by the aviation sector,¹⁹
- 97,000 jobs indirectly supported through the aviation sector's supply chain,
- In addition there are a further 495,000 people employed through the catalytic (tourism) effects of aviation.

High Productivity Jobs

- The average air transport services employee generates AUD 205,212 in GVA annually, which is around 1.8 times more productive than the average in Australia.

Contribution to public finances

The aviation sector pays over AUD 3.2 billion in tax including income tax receipts from employees, social security contributions and corporation tax levied on profits, with a further AUD 1.7 billion of revenue coming from passenger departure taxes, including GST. It is estimated that an additional AUD 2.6 billion of government revenue is raised via the aviation sector's supply chain and another AUD 1.8 billion through taxation of the activities supported by the spending of employees of both the aviation sector and its supply chain.

Consumer benefits for consumers and shippers:

Air passengers resident in Australia comprise approximately 58 million of the passenger total. For the 78 million passenger flights in total, passengers pay AUD 80.7 billion (inclusive of tax), with Australian residents paying around AUD 60.0 billion. This expenditure is likely to significantly underestimate the value passengers actually attach to the flights they use. Air

¹⁹ Available at: <https://www.iata.org/policy/Documents/Benefits-of-Aviation-Australia-2017.pdf>

transport is crucial for the distribution of high value to weight products. Air freight may only account for 0.5% of the tonnage of global trade with the rest of the world, but in value terms it makes up around 34.6% of the total.²⁰

Enabling long term growth:

In 2010 there were 113 routes connecting Australia to urban agglomerations around the world. On average there were 6 outbound flights per day along these routes. A total of 32 of these routes were connecting Australia to cities of more than 10 million inhabitants, with 1 outbound flight per day available to passengers. Frequencies are higher to the most economically important destinations. For example, passengers benefited from 4.8 outbound flights per day from Sydney to Los Angeles International Airport, and from 68 flights per day from Sydney to Melbourne, providing high speed access for business and leisure purposes throughout the day. Many of these city-pair connections are only possible because of the traffic density provided by hub airports. Australia's integration into the global air transport network transforms the possibilities for the Australian economy by:

- Opening up foreign markets to Australian exports;
- Lowering transport costs, particularly over long distances, helping to increase competition because suppliers can service a wider area and potentially reduce average costs, through increased economies of scale;
- Increasing the flexibility of labour supply, which should enhance allocative efficiency and bring down the natural rate of unemployment;
- Encouraging Australian businesses to invest and specialize in areas that play to the economy's strengths.

ECONOMIC DEVELOPMENT

Infrastructure is fundamental to economic development as businesses need roads to have raw materials delivered and hence to deliver finished products and services to their customers. One of the recent initiatives of the government is the installation of the water ATMs²¹, even in the most remote areas. With connectivity the economy will open to outside world, trade and commerce will flourish. With connectivity industries will be established as labour and capital will flow from surplus regions to connected and developing areas.

Reaching out to the ultimate consumers

In a society where highway construction can't be automated (yet), one of the easiest ways to get a slowing economy going again is for the government to put people to work. You need someone to work on roads, and highways, and all of the tubes running under them (anything from subways/car/railroad tunnels to electrical and telecommunication cables and sewages),

²⁰ *Ibid*

²¹ Available at: <https://www.thehindu.com/society/swipe-for-water/article23987352.ece>

and those people need to be paid to do those things. While examples of infrastructural development are many, their importance in pivotal is development.

Tourism: Role of Infrastructure Development Affecting a Better Economy

The development of tourism anywhere very much relies on the development of appropriate infrastructure, which services the needs of a tourist and encourages investment in the sector. Infrastructure such as accommodation, restaurants, built-up attractions, tours and transport are primarily developed by the private sector.

- Efficient transportation system - A transport system acts as a bridge between places of tourist origin and destination. In its absence, the resource potential for tourism i.e. attractions and amenities, can't be of any benefit. They further go to increase the tourist traffic, in turn ploughing in greater revenue. It is estimated that the tourists pass on their income to us by spending around 40% of their total expenditure on travel alone.
- Air transport - Aircrafts are known to carry tourists over long distances. About 97% of international tourists arrive in India today by air. Within the country, 82% of them travel by air as compared to 11 % by sea and water routes and 7% by land routes.²² The Rajasthan Govt. has taken a step ahead by proposing to construct airstrips for smaller aircraft at new places having tourist attraction though yet untouched by tourism. Himachal Pradesh aspires to emerge as a tourist state in the right earnest in the year to come. It proposes to have an international airport at Sundernagar in its centrally placed Mandi district. The expansion of Kulu, Kangra and Shimla airports for bigger planes and the extension of privately managed helipad taxi services to connect its interior with already existing 55 helipads are its other suggestion.
- Accommodation facilities - The need for accommodation in different classes of hotels suiting the varying requirements of tourists is no less an important part of tourism infrastructure. Accommodation facilities in the host country have become such an important part of tourist industry that it is now known as hotel industry by itself.

Infrastructure Development and Economic Growth

Infrastructure development has a directly proportional relation with the economy of the nation. In the better part of the last decade, Indian airports have continued to rank amongst the best in the world's best. The government has seen this as an opportunity for economic growth, and has decided on developing more world class airports in the country to meet the growing demands for air travel and also to enable regional connectivity. India's two major airports, Mumbai's *Chhatrapati Shivaji International Airport* and New Delhi's *Indira Gandhi International Airport* became the world's best airports under various heads, beating many international airports of South Korea, China and Singapore etc. As per the government plans, the following upcoming projects promise infrastructure development and economic growth:

²² Available at: <https://www.nios.ac.in/media/documents/316courseE/E-JHA-31-10B.pdf>

- *Jewar Airport*, Greater Noida, Uttar Pradesh.

This will be the second airport in the National Capital Region. The construction work will begin by the end of the year and it is expected to commence its operations in the next 5-6 years. This airport will provide a major boost to the tourism industry of Agra, Mathura and Vrindavan.

- *Dabolim Airport*, Goa, Maharashtra.

The International Airport of Goa is set for expansion. The Airport Authority of India is planning to put in an investment of 400 crores. It includes extension of existing passenger terminal building and development of more parking bays. Also, an additional International Airport is going to be set up at Mopa in North Goa at an estimated cost of 3000 crore.

- *Chaudhary Charan Singh Airport*, Lucknow, Uttar Pradesh.

A new integrated terminal is being built at Lucknow Airport which will have an area of 88,000 square meters along with the existing terminal building with 16292 square meters. It will be able to handle 2.6 million international and 11 million domestic passenger traffic annually and the new terminal will be able to serve the growing demand of passengers by 2030-2031.

- *Chennai Airport*, Chennai, Tamil Nadu.

A terminal building at the Chennai Airport, including the present proposal measuring 197000 square meter shall be 336000 square meter and it will be able to handle 35 million passengers per annum. In order to serve the growing demand of passengers, the building would be ready by 2026-27.

- *Lokpriya Gopinath Bordoloi International Airport*, Guwahati, Assam.

A new terminal building at Guwahati Airport will have an area of 102500 square meters in order to handle the combined annual capacity (old and new terminals) of 9 million passengers per annum. The building at Guwahati Airport will be ready to serve the growing demand of passengers by 2026-27 and it will encourage investment and tourism across the North - Eastern region with thrust on ‘Act East’ Policy.

- *Pune International Airport*, Pune, Maharashtra.

To meet the growing rush of air traffic in Pune, the city’s Airport is likely to undergo expansion. Earlier this year, the Director of Pune International Airport said that the airport will undergo expansion at a cost of Rs 650 crore. Also, the expansion is likely to include a new terminal building, new check-in counters and boarding gates.

- *Pakyong Airport*, Gangtok, Sikkim.

The airport, which got approved by the Central government in 2008, has been developed at

an estimated cost of Rs 350 crore. Interestingly, the airport is the country's 100th operational airport. The Pakyong Airport has been built at a height of 4,500 feet in an inhospitable terrain.

The link between growth in aviation and its impact on economic and social development is well organized. Development of infrastructure in aviation industry means generation of employment for building of infrastructure, generation of employment for the smooth and proper functioning of the industry. This employment generation is directly proportional to the economic growth of a country. Economic benefits of air transport include global increase as over 3.7 billion passengers are expected to fly in the financial year 2018-19 so it will act as a great enabler for the global economy and also air transport is an indispensable form of tourism which is a major growth engine for a developing country like ours. Airport Authority of India (AAI) plans to invest 15000 crore in 2018-19 for expand the existing terminals and making new ones.²³

CONCLUSION

Today, India is brimming with new hope, energy and excitement of a new future. To meet the hopes of our people for a better and quality life, and aspirations of our youth for employment and brighter future, a fast-tracked infrastructure development is the critical need of the hour. The results must also reach all sections of people, in every corner of the country.

As rightly stated by the noted Economist Dr. VKR Rao, "*The link between infrastructure and economic development is not a once and for all affair. It is a continuous process; and progress in development has to be preceded, accompanied, and followed by progress in infrastructure, if we are to fulfil our declared objectives of generating a self-accelerating process of economic development.*"

This is even truer today. Infrastructure is the backbone of economic development and key to the efficiency of all investments, domestic and foreign. It is also crucial for country's security, disaster preparedness, strategy for poverty reduction and employment generation. Obviously, it cannot be a "business as usual" any more. It is necessary to inject a warlike urgency, overhaul our policies and priorities, introduce world class practices, modern technologies in material and project management, and build in accountability and responsiveness.

SUGGESTIONS

- Manage infrastructure like a business. It should be run like a service industry, responsive to the needs of customers.
- Introduce '*competition*' - competition gives choices to users and brings in efficiency and accountability. Any monopoly breeds inefficiency and lethargy.

²³ Dr. N. Vijayakumar, Dr. C. Vijai, *Indian Civil Aviation Industry*, International Journal of Multidisciplinary Research and Development.

- Introduce technology - new technology innovations in management, implementation, materials and machinery, etc. can reduce costs and modernise usage. There could also be new evolving global standards, which may also facilitate global investments.
- Upgrade capacity - it would be important to build and upgrade capacity, of management, implementation, contractors, skilled technicians, enabling them to undertake desired projects.
- Ensuring that the infrastructure development which is capital intensive, with long gestation period, does not suffer from dearth of financing, provide adequate set of incentives to attract funding through various modern instruments.
- Introduce a system of recognition for early or timely completion (Delhi Metro was a classic example of timely implementation) and penalties for delays and thereby cost overruns.

To conclude, our path in the quest to reach the top may be difficult but we are set on the right track, with speed, confidence and determination. Now, as Swami Vivekanand had thundered:

“Rise, awake and stop not until the goal is reached”

ROLE OF HEALTHCARE AND EDUCATION SECTOR IN ECONOMIC GROWTH

Shanya Agarwal & Shweta Singh ***

INTRODUCTION

A country's transition from developing to developed category depends on infrastructure, as infrastructure supports primary (agriculture), secondary (industry) and tertiary (service) sectors. Infrastructure can be classified as economic and social infrastructure. Economic development depends not only on economic infrastructure like a well-developed transport and communication network or the extension of irrigation facilities in dry areas but also on social infrastructure. In a broad sense, economic development depends on expansion of not only society's production capacity but also on social and economic opportunities. Therefore, not only economic infrastructure but also human capabilities play a central role in economic development. Human capabilities depend on social infrastructure.

Social infrastructures are foundational services and structures that support the quality of life of a nation, region, city or neighbourhood. This includes any infrastructure that goes beyond basic economic functions to make a community an appealing place to live. It includes healthcare (hospitals), education (schools and universities), public facilities (community housing and prisons) and transportation (railways and roads). All of these structures serve as the backbone for communities and societies.

A country's level of human and economic development is closely related to its level of achievement in physical and social infrastructure. While physical infrastructure is an important determinant of domestic production, good social infrastructure is vital for human development as well as economic progress through better educated, better skilled and healthier citizens.

The main constituents of social infrastructure are Education and Health. The education and health are considered as investments in human capital for economic development as compare to physical means of production, such as factories and machines. The economic attainments of Europe, North-America, Japan, and East-Asia are inconceivable without their attainments in human capital; hence the importance of social infrastructure. Therefore, it can be surmised that investment in human capital through education, training, health, and medical facilities yields additional output and economic returns. Economic growth theory also sees human capital as important source of economic growth. Further, to achieve rapid economic growth, it is essential that the population should be well educated and trained to be able to work

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effectively. It is also essential to reduce poverty. No amount of welfare measures can help a poor illiterate person the way education can by enabling him to become more productive and skilled. Therefore, effective education for the masses is crucial for reducing poverty and sustaining high rates of economic growth over long periods by providing a well-skilled labour force. The role of physical infrastructure in promoting economic development has been well-documented in the literature¹.

HEALTH

Health denotes the condition of a person's body or mind, it includes mental health, physical health and healthy environment for protecting the around health of a human being. A good health means state of being free from illness or injury². This conceptual idea reflects the general meaning of the health is that if any human being is not in good health it means he is ill, but this is not the general aspect of the health, it is a confusing definition of health. In real sense the absence of illness does not mean that one is in good health. According to the Constitution of the World Health Organization (WHO), "health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity". Health is one of the fundamental rights of every human being without distinction of race, political belief, economic and social condition"³. Good health is very essential for survival, long life and new product of progressive ideas; it is a motional requirement for the development of the society, by good health individual may perform excellent activities in all the spares of individual and collective life so that the society consistently rises to higher levels of endeavor and achievement.

Conceptualization of right to health is the path for achieving the other basic rights which are related to economic, social, cultural, earn livelihood, build housing, take food, hygiene, proper work condition, and exercise of various freedoms such as right to happiness, right to equality, right to education, right to protection, right to practice any religion and to form association, right to social security, right to fair and humane treatment, right to civilized treatment in custody and in prison, right to impartial and speedy justice and protection of human rights in every circumstances of the society.⁴ The health of a person is itself wealth of society, thus conceptually health includes the wealth, because by good health one may capable, competent, ability, skill, power, talent and knowledge for the earning of different kind of wealth.⁵

¹ In paper by Pradeep Agarwal on *Infrastructure in India: challenges the way ahead*

² Oxford Advanced Learner's Dictionary, (2007) p. 597

³ World Health Organization, Preamble, par. 1,2 adopted by the International Health Conference (New York)

⁴ The general meaning of conceptualization is to form an idea in mind. It means due to good health of women new creative ideas may be formed for exercise of freedom of speech and expression, form associations and unions, to move freely without physical hindrance and obstacles and comfortably reside and settle in any place of the world subject to the legal provisions of the domestic legislation.

⁵ Wealth reflects the large amount of money, property, etc. and it also indicates to become rich, well educated, talent and great experience of the life and job.

Health care requires to be nurtured from the childhood, care to health is a determined factor to great extent by behaviors learned from the childhood and starting to appear throughout the world. Physical activities for the betterment and good health are also part of the conceptualization of the health. If the physical activities decreased in the adolescence and obesity has increased it is very dangerous for the good health.

Legal Aspect related to Health

The preamble to the Constitution which gives a broad direction for the Indian republic refers to social, economic and political justice and also equality of status and of opportunity. Under the term social justice, one can bring in the question of access to health care facilities and the principle of justice involved in the equality of access to these facilities. In the same way, equality of status and opportunity may be taken to refer to the equality of practice of the medical profession, access to medical educational institutions etc., in order to improve the citizens' socio-economic and health status.

The constitution of India not provides for the right to health as a fundamental right. The constitution directs the state to take measures to improve the condition of health care of the people. Thus, the preamble to the constitution of India, *inter alia*, seeks to secure for all its citizens justice-social and economic. It provides a framework for the achievement of the objectives laid down in the preamble. The preamble has been amplified and elaborated in Directive Principle of State Policy.

Article 47 of Constitution of India, casts a duty on the state to raise the level of nutrition and standard of living and to improve public health. The provision of this article provides that the state shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as amount its primary duties and in particular, the state shall endeavour to bring about prohibition of the consumption, except for medicinal purposes, of intoxicating brings and of drugs which are injurious to health⁶.

Healthcare at the International level

The quality of health services and medical negligence has been a matter of great concern at the International level. The General Assembly of the United Nations, has adopted various resolution to safeguard the interest of patients Article 25 of Universal Declaration of Human Rights states that : everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food, clothing, housing and medical and necessary social services and the right to security in the event of unemployment, sickness, disability, widowhood, old age other lack of livelihood in circumstances beyond his control.

Article 12 of the International Covenants on Economic, Social and Cultural Rights, 1966, *inter alia*, states, *the state parties to the present convention recognise the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.*

⁶ Legal framework for healthcare in India by S.K. Verma

The International Covenant on Civil and Political Rights 1966, the UN Declaration on Elimination of All Forms of Discrimination against Women 1967. The Convention on the Elimination of All Forms of Discrimination against Women 1979 and Convention on the Rights of the Child provide, *inter alia*, for the protection of health care rights of persons including women, children and other disadvantaged sections of society.

The World Health Organisation has also played a pioneering role for the last fifty years, in guiding health policy development and action at the global and national levels, with an overall objective of ensuring and attaining the highest standards of healthcare to all the people around the world. The preamble to the World Health Organisation Constitution⁷, *inter alia* provides:⁸

- The enjoyment of the highest standards of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic and social condition.
- The health of all peoples is fundamental to the attainment of peace and security and is dependent upon the fullest co-operation of individuals and states.
- The achievement of any state in the promotion and protection of health is of value to all.
- Unequal development in different countries in the promotion of health and control of disease, especially communicable diseases, is a common danger.
- Healthy development of the child is of basic importance; the ability to live harmoniously in a totally changing environment is essential to such development
- The extension to all people of the benefits of medical, psychological and related knowledge is essential to the fullest attainment of health
- Informed opinion and active co-operation on the part of public care of the utmost importance in the improvement of the health of the people
- Governments have a responsibility for the health of their people, which can be fulfilled only by the provision of adequate health and social measures.

Article 2 of the World Health Organisation constitution, delineates several functions, which directly and indirectly require the application of legal principles, such as:

- To act as the directing and coordinating authority on International health work;
- To propose ‘Conventions, Agreements and Regulations’, make recommendations with respect to International health matters, and to perform such duties as may assign thereby to the Organisation and consistent with its objective; and
- To develop, establish and promote International standards with respect to food, biological and pharmaceutical and consumer products.

Apart from the above, a number of International agencies to have lent support public participation in healthcare. To this end the World Health Organisation Allma Ata

⁷ The world Health Organization’s Constitution came into force in 1948

⁸ Legal framework for healthcare in India by S.K. Verma

Declaration,⁹ clearly states, *the people have the right and duty to participate individually and collectively in the planning, and implementation of their healthcare.*

Column 5 is Health Indicators for India and Other Emerging and Developed Countries¹⁰

Indicators	Year	India	China	East-Asia	BRCS	Developed
Life expectancy at birth, total(years)	2011	66	75	73.5	67.1	80.5
	2000	61.6	71.2	70.6	65.4	78.5
Physicians(per 1000 people)	2011	0.65	1.82	0.99	2.2	2.8
	2000	0.6	1.1	0.61	1.7	2.6
Hospital beds(per 1000 people)	2011	0.9	4.2	3.8	4.7	7.02
	2000	0.6	2.5	2.3	5.3	7.9
Health expenditure, public(percent of GDP)	2011	1.2	2.9	2.2	3.7	8.7
	2000	1.3	1.8	1.6	2.8	6.7
Health expenditure, public (percent of Government expenditure)	2011	8.1	12.5	9.9	11.0	18.4
	2000	3.9	11.1	7.5	9.7	16.2
Health expenditure per capita, PPP (Constant 2005 International\$)	2011	141.0	432.0	677.6	933.4	4679.6
	2000	69.4	107.0	272.9	380.5	2741.9
Improved water source (percent of Population with access)	2011	91.6	91.7	94.0	94.4	99.5
	2000	81.0	80.0	89.8	88.8	99.2
Improve water source, rural (percent of rural population with access)	2011	89.5	84.9	89.9	85.2	97.5
	2000	77	70	82.2	76.0	97.1
Improve sanitation facilities (percent of population with access)	2011	35.1	65.1	84.4	72.6	99.8
	2000	25.0	44.0	79.0	66.3	99.5

⁹ Alma Ata Declaration adopted in 1978

¹⁰ *Supra note 1*

Improve sanitation facilities, rural (percent of rural population with access)	2011	23.9	55.8	80.7	55.1	99.3
	2000	14.0	35.0	74.0	48.8	98.1

Not just medical facilities but even drinking water supply and especially sanitation in

India continues to be inadequate, though there is some improvement. The share of Indians with access to improved sources of water has increased from 72 per cent in 1990 to 81 percent in 2000 to 91.6 per cent in 2011. Although these numbers do not look so bad by

International comparison (averaging from 91 per cent for China to 99 per cent for developed countries; see Column 5)¹¹, it has to be noted that even those with access to improved water in

India typically gets water for only a few hours a day (only two Indian cities have water supply) and even the 'improved source' is often not entirely safe for drinking.

However, it is the level of sanitation that is a real cause of concern and requires major effort by various levels of government and communities for improving coverage. Thus, at the national level, improved sanitation facilities were available to only 17 per cent of population in 1990, 25 per cent in 2000, and even in 2011 it was only at 35 per cent (compared with about 70 per cent in other emerging economies and 99 per cent in developed countries; see Column 5). Poor sanitation is particularly dangerous to health, as it is very likely to lead to infection of water sources and water supplies reaching the poor—leading to a large number of waterborne diseases like diarrhoea, cholera, typhoid, etc. (endemic in India) and endless health problems including poor absorption of nutrients from food. This leads to a large number of health problems for the poor. Combine this with highly inadequate public health facilities and you get the nightmare that the poor in India face—poor health, malnutrition, frequent infections, and resulting acute medical and financial distress. Thus, poor sanitation facilities (lack of toilets, poor waste disposal) are a major source of misery for the poor and in very urgent need of serious attention from all levels of government (local, state, and national).

Additional financial and managerial resources need to be provided for this are needed, as

India's level of investment in water, sanitation, and public health has been low by International standards.

EDUCATION

Education is a most powerful weapon which you can use to change the world. In the present age of globalization and technological developments, the paramount pre-requisites for

¹¹ In paper by Pradeep Agarwal on Infrastructure in India: challenges the way ahead

endurance in society are education as it plays a pivotal role in the process of overall growth of human beings. Mahatma Gandhi placed the concept of education before the country in 1937 stating, “*By education, I mean an all-round drawing out of the best in child and man-body, mind and spirit.*”¹²

India has a vast population of young people. Even after 66 years of independence, a surprisingly large proportion of our youngsters are not getting sufficient education or vocational training. On the one hand, this keeps a large number of them in poverty and misery for lack of productive skills; on the other hand, it reduces the rate of economic growth because of the lack of enough sufficiently skilled workers in many areas, which reduces our International competitiveness. Thus, India requires strong educational infrastructure to keep pace with the growing economy and provide it with quality manpower. Education can accelerate economic growth and investment and is a key indicator to quality of life and the Human Development Index (HDI).

Over the past decade or so, both central and state governments have implemented new initiatives and increased spending to encourage greater enrolment and attendance at the school level. This has led to some improvement. Despite this, the performance of the education sector has been woefully inadequate. In April 2010, the Right to Education (RTE) Act was passed. With its implementation, the universalization of primary (standards one to eight) education was given new impetus. The RTE Act makes education a fundamental right of every child between the ages of 6 and 14 and specifies minimum norms in elementary schools. It requires all private schools to reserve 25 per cent of seats for poor children (to be reimbursed by the state). It also prohibits donation or capitation fees. The RTE Act requires surveys that will monitor all neighborhoods, identify children requiring education, and set up facilities for providing it.

Legal Aspect related to Education¹³

The constitution of India came into force on the 26th of January, 1950. Originally, Article 45 therein states, “*The state shall endeavor to provide, within a period of ten years from the commencement of this constitution, for free & compulsory education for all children until they complete the age of fourteen years.*” This was the only constitutional provision with a time-frame. The time frame ended in 1960.

To strengthen the position of education, the Government of India took an essential initiative through the enactment of the 86th constitution (Amendment) Act, 2002. This attempt to achieve and facilitate the realization of free & compulsory education between the age of 6 and 14 years as a fundamental right (Article 21-A), despite the Amendment, the present system is facing wide ranging problems, which in turn is hampering the spirit of the enactment.

¹² National Colloquium on Human Rights: Issues & Challenges in India.

¹³ Justice A.K. Patnaik

Column 1 provides on Education Sector characteristics measured by enrollment, literacy rate, pupil-teacher ratio, public spending, etc., to take stock of the current situation in India and compare it with International standards and achievements. First, we look at adult literacy rates. Even in 2011, India's Adult Literacy rate (only 63 percent) was way behind that of China, East Asia, and BRCS Countries (about 94 percent) and developed countries (98 percent). India's literacy rate gap with China and East Asia has stayed nearly the same for the last 10 years. The gap is narrower among the youth but still substantial- 81 percent of India but about 99 percent for the rest of the emerging and developed Countries. In addition to literacy rate, average years of Schooling per adult is an important and commonly used indicator to measure educational attainment. It was only 4.4 years in India, about half of the average for other emerging countries (China at 7.5, East Asia at 8.5 and BRCS countries averaging 8.8 years) and even less than half of the developed countries (about 10.7 years of schooling per adult on average¹⁴.

Column 1 India and the World: Comparison of the Access to and Quality of Education¹⁵

Indicators	Year	India	China	East-Asia	BRCS	Developed
Literacy rate, adult total (percent of people ages 15 & above)	2010-11	62.8	94.3	94.9	93.2	98.3
Literacy rate, youth total (percent of people ages 15-24)	2010-11	81.1	99.4	98.5	98.6	99.5
School Enrollment, primary (percent gross)	2010-11	112	111.2	104.5	112.5	104.7
School Enrollment, secondary (percent gross)	2010-11	63.2	81.4	82.0	92.4	104.1
School Enrollment, tertiary (percent gross)	2010-11	17.9	26.8	49.0	35.9	67.7
Average years of schooling	2010-11	4.4	7.5	8.5	8.8	10.7
Public spending on education, total (percent of GDP)	2010-11	3.3	-	4.3	5.3	5.2
Public Expenditure per student, primary (percent of GDP per	2010-11	7.3	6.0	15.9	53.2	21.4

¹⁴ World Development Indicators, 2012

¹⁵ *Supra note 1*

(capita)						
Public expenditure per student, secondary, (percent of GDP per capita)	2010-11	13.8	11.5	17.3	45.7	26.9
Public expenditure per student, tertiary (percent of GDP per capita)	2010-11	69.8	90.0	23.3	47.7	26.3
Pupil-teacher ratio, primary	2010-11	30.2	16.8	19.4	21.7	15.8
Pupil-teacher ratio, secondary	2010-11	25.3	15.2	20.2	16.3	13.3
Research and development expenditure (percent of GDP)	2010-11	0.8	1.7	0.95	1.34	2.6
Researchers in R&D (per million people)	2010-11	136	863.0	1265.8	263.0	4269

These poor outcomes are partly due to low levels of public expenditure on education and partly due to weak institutions and governance. Thus, public expenditure on education as a fraction of GDP was again lower at 3.3 per cent in India as compared to 4.3 per cent in East Asia and about 5.3 per cent in BRCS and developed countries. Similarly, expenditure per student as a percentage of GDP per capita in primary and secondary education was significantly lower in India at 7 per cent and 14 per cent but many times higher in BRCS and developed countries (though not in China). However, the expenditure on students in the tertiary sector is significantly higher in India than in East Asia, BRCS countries, and even developed countries (with China even higher than India). This seems to be the result of continuing practically free education even at the tertiary level in India and China while the costs go up sharply. It, however, seems a misplaced subsidy, since the benefit goes largely to the middle and upper classes rather than the poor. Instead, the urgent need in India is to expand the tertiary education opportunities (even if it means raising its costs to some extent) and to improve the institutional structure to better reward excellence, which seems to be taking a backseat.

Relationship between Education & Health

In childhood, good health improves educational outcomes. Additionally, the expectation of good adult health increases schooling investments in childhood. Both health & education persist from childhood to adulthood at which point education boosts health. But adults are also parents, so there circumstance in middle age spills over onto the next generation. Healthier mothers have healthier children and more educated children. Conversely, parental education, promotes both the health and the education of the next generation. At this stage, the causal system repeats in the next generation.

DEVELOPMENT

Removal of poverty calls for upgrading of individuals as well as community. Upward mobility of poor from lower and undesirable economic, social and political strata to a higher echelon would be attainable only through a process of development. This upgradation is to be viewed not as a favour or bounty given but as their valuable right.

Poverty is the biggest violator of human rights. Its eradication is vital for development. Poverty is not to be addressed as a merely development project but tackled in a wide spectrum manner to achieve human dignity. The agenda must include provision of all such basic amenities like housing, safe drinking water, health care, proper nutrition, educational opportunities of basic capabilities rather than merely as low incomes. Poverty has to be eradicated through the process of human development¹⁶.

SUGGESTIONS

- All public facilities for basic health and education must be built and maintained by the Municipal Corporation to ensure Universal access. Private facilities, if any, must be built in addition to the national norms, not has a substitute for public facilities.
- Social Infrastructure must be introduced carefully near and within informal settlements to support and facilitate up gradation and improvements. Basic health & education facilities must be introduced with participation of residents of self-built communities.
- Basic social infrastructure (dispensaries, health posts, primary schools, etc.) must not be provided by land cooling. These are necessities, and are part of the welfare responsibilities of the state and cannot be left to local contingencies. These must be reserved in the development program and provided.

CONCLUSION

Infrastructure services are essential to achieve development targets in any economy some of its major dimensions include the level of economic growth, level of Education, level of health services. Health and Education along with support infrastructure such as shelter, sanitization, school and hospitals that can give economic growth a human face. By improving the quality of human resources and enhancing capability, these indicators act as stimulants to growth. As K.C. Pant rightly said, “Infrastructure sector may not always be an engine of growth directly but they are essential rails on which the wheels of Economic progress can proceed with sustained speed. Without a strong & viable infrastructure, it is difficult to achieve rapid and sustained growth of the order of 7 to 8 percent, which is necessary for progressively eradicating poverty.”

¹⁶ Textbook on law, poverty and development by Maj. Gen. Nilendra Kumar

BIOSAFETY AND LEGALITY OF GENETICALLY MODIFIED CROPS

Dr. Ajay Bhatt & Apoorv Bhardwaj***

Abstract

High use of pesticides, infestation by insects and diseases, low yielding crops are some of the primary concerns of the average farmer. Biotechnology offers solutions to this problem by altering the genetic make-up of the plants to make them more disease and pest resilient, high yielding and requiring lesser resources such as water and fertilizers. However, the position related to the legality of use of genetically modified crops is fluctuating in India. The Government needs to balance between the concerns related to environment and health hazards on one hand and food security for the nation on the other. Hundreds of GM crops are pending approval after completion of research. Bt Brinjal's approval was revoked post grant. Bt Cotton is the only GM crop to be grown at a commercialized scale while others like Bt Soya, Bt Mustard etc. are still awaiting approval from the government. However, owing to the lack of regulations many of the GM crops are already finding their way to the market. This paper aims at ascertaining the direction in which this fluctuating legal position relating to GM crops is most likely to go in light of latest judgments, guidelines by government and international position of GM crops.

Keywords: Pesticides, Infestation, Biotechnology, GM Crops etc.

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INTRODUCTION

Today technology has pervaded all walks of life. It is influencing the way we communicate, travel, think and even eat. One of the important applications of technology has been in the area of agriculture. From developing better tools and technical implements, better irrigation facilities & potent pesticides and herbicides technology has now leapt into the area of genetically designing crops itself. This marriage of bio-technology and genetic engineering has produced fascinating results and opened a world of limitless possibilities at one hand and given rise to unprecedented challenges and fears on the other. The age-old question "Should man play God" becomes ever more realistic in the light of the capabilities of genetic engineering. New plant varieties developed using recombinant DNA (rDNA) techniques, commonly referred to as genetically engineered (GE), genetically modified (GM) or transgenic plants, have been and are being developed with the aim of: enhancing productivity; decreasing dependence on the use of agricultural chemicals; modifying the inherent properties of crops; and improving the nutritional value of foods and livestock feeds. As more GE plants are released and the resultant food products are commercially available and are traded across various countries, concerns have been expressed about their safety.

MENDELIAN INHERITANCE AND GENETIC ENGINEERING OF CROPS

Since the 20th century, the farmers have followed the practice of accumulating better traits in a crop line by following the principles of Mendelian inheritance. The average farmer knows that a good parent crop gives a good progeny crop. However this method has its own limits i.e only those good traits can be selected which are already present in the population and any new characteristic will develop only by evolution (which is very gradual process) or mutation (which is influenced by some radical changes in the environment). However, both these processes are not of much use to the agricultural practice for two reasons – one, that both of them are chance processes and second that the resulting outcome may not necessarily be favourable for the farmer. Biotechnology by employing the technique of genetic engineering eliminates all these concerns and is able to modify the genetic make-up of crop by utilizing traits existing in other species and produce sustainable and desirable outcomes for the farmers.

BIOTECHNOLOGY, GENETIC ENGINEERING AND BT COTTON

Biotechnology means the application of scientific and engineering principles to the processing of materials by biological agents to produce goods and services¹ whereas "Genetic engineering" means the technique by which heritable material, which does not usually occur or will not occur naturally in the organism or cell concerned, generated outside the organism or the cell is inserted into said cell or organism. It shall also mean the formation of new combinations of genetic material by incorporation of a cell into a host cell, where they occur naturally (self-cloning) as well as modification of an organism or in a cell by deletion and

¹ Rules For The Manufacture, Use, Import, Export And Storage Of Hazardous Micro Organisms Genetically Engineered Organisms Or Cells, 1989

removal of parts of the heritable material.² Bt Cotton is a genetically modified cotton crop in which strains of Bt toxin producing genes of the bacterium *Bacillus Thuringiensis* has been inserted. *Bacillus Thuringiensis* produces Bt toxins which are fatal to most of the insects and pests that prey on the cotton plant. Once genetic modification is done then the cotton plant acquires an inherent insecticidal property. Bt Cotton thus is a fruit of biotechnology and genetic engineering. However, like every new technology it has its own pros and cons.

PROS AND CONS OF GM CROPS

Those who argue in favour of GM crops make the argument that a movement towards GM crops is essential to food security of the world and better nutrition for its citizens. Eminent agronomists advocating for safe use of genetically modified crops have said that GM crops may be the only way to feed the starving millions and if a choice has to be made between no food and GM food then the latter should be accepted wholeheartedly. For farmers too, GM crops may mean lesser crop failure, higher yield and resource optimization. However, those who argue against GM crops have a variety of health, environment and regulatory concerns at heart. The scientific community itself seems divided on the issue of health risks associated with GM food. GM food basically introduces new genes in a species which were not present earlier; sceptics fear that this may expose humans to proteins to which we have never been exposed to earlier. Evolutionarily, we may have no capability of dealing with diseases which may be linked to these proteins. The associated health risks with GM food are thus unidentifiable and limitless. Ecologically too, it makes little sense to introduce GM crops. By growing GM crop we may accidentally tinker with the ecological balance. Those who argue from a legal and regulatory stand point usually make the argument that if GM crops are given a free run then the food sovereignty of our nation will rest in hands of corporate making and marketing GM crops. These regulatory fears however seem to have been answered by restrictions on patenting of GM crops by many jurisdictions.

GM CROPS AND IPR

Whether companies like manufacturing Bt Cotton enjoy patent rights on the seed is a burning issue in the Indian IPR regime. For now, this has been settled in the negative by a division bench of the Delhi High Court.³ This decision which is seen as a victory of farmers and food sovereignty of the nation has largely upset the Indian agrimarket. Presently, Monsanto's appeal against this decision is pending in the Supreme Court. However, as a major victory for Indian seed manufacturers the apex court has refused to put a stay on the high court's decision. India while the TRIPS negotiations were going advocated on behalf of the farmers of the country to exclude out seeds and plant varieties from patentability. Article 27 of the TRIPS is important in this regard. Article 27(2) of TRIPS provides that

Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public*

² *ibid*

³ *Monsanto v Nuziveedu Seeds FAO (OS) (COMM) 86/2017, C.M. APPL.14331, 14335, 15669, 17064/2017*
Delhi High Court pronounced on 11.04.2018

or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law

More Specifically Article 27(3)(b) provides that members may also exclude from patentability,

Plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.

On the basis of this India enacted the Protection of Plant Varieties and Farmers' Rights Act 2001 (PPVFR Act) which is an effective *sui generis* system for protection of plant varieties. Also section 3(j) of the Patents Act 1970 (Patents Act) states that "plants and animals in whole or any part thereof other than micro-organisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals" are not inventions.

The Delhi High Court ruled that Bt-cotton seeds are not inventions as per section 3(j) of the Patents Act and that Monsanto can seek protection under PPVFR Act. This gave double relief to the Indian farmer. First, Bt Cotton could be made available to it at cheaper rates by Indian seed manufacturer and second and more importantly, freedom from terminator gene technology. Terminator gene is a type of gene which is inserted in GM crops to make the seed unviable in the second growing season so that the farmer has to purchase a new seed every growing season. The PPVFR Act has a specific protection for farmers that they can sow, resow, exchange or even sell seeds and that all seeds shall be free from this terminator gene technology.

LEGALITY OF GM CROPS

The GM crops struggle to trace their legality in primarily in various rules framed by Ministry of Environment and Forests (MoEF) under the Environment Protection Act, 1986, the Food Safety and Standards Act, 2006 (FSS Act), The Biosafety guidelines framed by Department of Biotechnology under the Ministry of Science and Technology and Plant Quarantine (Regulation of import into India) Order, 2003. The MoEF in exercise of its powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 has framed certain rules namely "Rules For The Manufacture, Use, Import, Export And Storage Of Hazardous Micro Organisms, Genetically Engineered Organisms Or Cells, 1989" these rules have effectively set up 6 authorities responsible for implementation of these Rules,

- Recombinant DNA Advisory Committee (RDAC);
- Review Committee on Genetic Manipulation (RCGM);

- Genetic Engineering Appraisal Committee (GEAC); (earlier, Genetic Engineering Approval Committee)
- Institutional Bio-safety Committees (IBSC);
- State Biotechnology Coordination Committees (SBCC);
- District Level Committees (DLC).

These committees basically screen the GM crops at four stages pre-research, research, release and post release. The most important committee, the GEAC is responsible for giving research and release related approvals to GM crops. Till date the GEAC has given research related approvals to hundreds of GM crops however Bt Cotton continues to remain the only commercialized GM crop in the country. GEAC has given commercial approval to 809 varieties of Bt Cotton to date.⁴ In October 2009 GEAC had cleared another crop, the Bt-Brinjal for commercial release however it was later revoked by government. In 2017 also the government with a view to give impetus to its mission of doubling farmers' income by 2022 seemed inclined to allow GM crops. However a detailed note put up by the Environment Ministry somewhat in favour of Bt-mustard was withdrawn as quickly as it was put up.⁵ It is pertinent to mention here that at least 5 out of the 7 parameters identified by the government to double farmers' income may directly be impacted by GM crops.⁶

WHY BT COTTON AND NOT BT BRINJAL/MUSTARD?

Bt Cotton is a non-food crop and crops like Bt Brinjal, Bt Mustard, Bt Soya etc. are food crops and are likely to be consumed by humans. The suspecting scientists and public have deep rooted concerns about consumption of genetically modified food and health related complications which may arise from the same. Stating that there was no urgency to introduce Bt-Brinjal and given overwhelming negative sentiments against introduction of Bt Brinjal the government was more inclined towards taking a more cautious, precautionary and principles based approach and hence, in a move which deeply injured the credibility of GEAC the government revoked the approval granted to Bt Brinjal in February 2010.

ANTI GM CAMPAIGN IN INDIA

There have been several Public Interest Litigations filed by various groups against GM crops citing various healths, environmental and regulatory concerns. Gene Campaign India has filed four PILs which are at various stages. Their core concerns are setting up a national bio-ethics committee, making GEAC more transparent and competent, setting up a national biotechnology regulator authority and ingraining the precautionary and the polluter pays

⁴ Yearwise list of commercially released varieties of Bt cotton hybrids by GEAC; Available at: www.geacindia.gov.in (Accessed on: November 05, 2018)

⁵ PM Narendra Modi Government rethinking plan to get GM food in India for the first time ever?, Financial Express, May 15 2017

⁶ Doubling Farmers' Income; NITI Policy Paper No.1/2017 Available at: www.agricoop.nic.in (Accessed on: November 05, 2018)

principle in the biotechnology regime more explicitly and effectively. The PILs are at various stages of litigation and appropriate directions have been passed by the Supreme Court on various dates.⁷

MARKETING OF GM FOOD IN INDIA

The regulatory authority in this regard is the Food Safety and Standard authority of India set up under the Food Safety and Standards Act, 2001. Importantly, the act includes genetically modified foods within the definition of food under it. Section 22 of the Food Safety and Standards Act, 2006 provides that “no person shall manufacture, distribute, sell or import any genetically modified article of food except as otherwise provided under the Act and regulations made thereunder”. Hence, in a reply given to the Supreme Court the FSSAI has maintained that it has not framed any regulations allowing GM Crops in India and so they continue to remain illegal. The work on framing regulations on GM Food has however commenced and draft regulations are underway. These regulations will lay down procedures for the safety of GM food for human consumption however GEAC will continue to regulate the environmental aspect of such food. Both these bodies hence, need to work in close conjunction and cooperation. In the meanwhile, FSSAI has come up with draft Food Safety and Standards (Labelling and Display) Regulations that also specify threshold levels for labelling requirements of GM foods. The labeling requirements will give information to consumers about the maximum GM content contained in the given food item. This will help the consumers in making informed choices. The proposed maximum permissible level for GM content for which no labeling will be required is 5% by weight. This follows international practice being followed in countries like Japan, Canada, Thailand and Indonesia however it is more liberal than the practice in EU which prescribes threshold of 0.9 %. However, draft is open for public as well as industry inputs.

INTERNATIONAL FRAMEWORK

Agenda 21 was adopted at the Rio Summit in 1992. It is a non-binding agenda which calls upon the international community to address a wide spectrum of environmental and developmental issues. Chapter 16 of Agenda 21 recognizes the importance and growing significance of biotechnology and the need to ensure that it is developed and applied in an ecologically sustainable manner. Apart from Agenda 21 there are two major international protocols that address genetically modified organisms, the Cartagena Protocol of 2000 of which India became a signatory on January 23, 2001 and the Nagoya-Kuala Lumpur Supplementary Protocol of 2010 of which India became a signatory on October 11, 2011. Both these protocols are attached to the Convention on Biological Diversity of 1993 and are in force. The Cartagena Protocol aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health. Whereas The Nagoya - Kuala Lumpur Supplementary Protocol on Liability and redress aims

⁷ Gene Campaigns Legal Actions on GMOs; Available at: www.genecampaign.org (Accessed on: November 05, 2018)

to contribute to the conservation and sustainable use of biodiversity by providing international rules and procedures in the field of liability and redress relating to living modified organisms and damage resulting from living modified organism which find their origin in a transboundary movement. Another international treaty on this subject which is in harmony with Convention on Bio diversity is the International Treaty on Plant Genetic Resources for Food and Agriculture also known as the “Seed Treaty”. Article 9.2 (c) of the treaty determines that farmers’ rights include “the right to participate in making decisions, at the national level, on matters related to the conservation and the sustainable use of plant genetic resources for food and agriculture”.

CONCLUSION

Genetically modified food crops are the future of food security in this world. The solution can never be in the form of a blanket ban on these crops but in robust regulation and risk assessment. India has so far adopted a very cautious approach in giving approval to these crops. Till the time the concerns of the two most important stakeholders of this system i.e the farmer and the consumer are taken care of it will not be prudent to introduce GM crops in the ecosystem given that once introduced their impact is going to be irreversible. However, gradually we have to move in an era of GM food to meet the needs of the burgeoning population.

SHIELDING TREES AGAINST GROWING INFRASTRUCTURAL GREED

*Ankit Shrivastava**

INTRODUCTION

India is undergoing journey of economic liberalization and revolutionary growth and one of the most important aspect of economic development is – Infrastructure. However, most of the times the cost of these development and infrastructure growth is substantial negative impact on the environment. The infrastructural development has huge potential of having great negative impact in the environment. Land, Air, Water, everything is polluted because of these infrastructural projects. A lot of these negative impacts, however, may be either mitigated or minimised by presence of robust regulations to safeguard the environment. But at the same time there is an apprehension in the minds of investors, and even governments, that stringent economic policies and regulations may hinder infrastructure development.

There are quite a few regulations in India to safeguard the environment and they have detailed procedures to assess the impact of the proposed infrastructure projects such as the Environmental Protection Act, 1986, Forest Conservation Act, 1980, Water Prevention and Control of Pollution Act, 1974, Biological Diversity Act, 2002, Public Liability Insurance Act 1889 and National Green Tribunal Act, 2010. Even the Constitution of India vide Article 48A and 51A (g) includes provisions related to protection of environment. But how properly these legislations are being complied with has to be analysed. Typically, in countries where compliance is low, projects meant for development have also resulted in substantial environmental and social costs. Governments and investors fear the implementation of environmental policies and claim that these are bottlenecks or speed breakers to growth. Several new studies show that stringent compliance of environmental policies will neither affect competitiveness nor slow down GDP growth. On the contrary, it may result in bottom line benefits at the level of projects as well as sustain economic growth by enhancing efficiency and innovation.¹

Certain compliances and conditions are also mentioned in these legislations which have to be followed before approval of the Infrastructural projects. But the efficacy of these regulations in the present times is something which has to be analysed. Proper implementation and enforcement of these regulations, especially after the project is approved, i.e. in later stages is

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¹ Green Tape: Environmental Regulations may not cost as much as governments and businesses fear, Jan 3, 2015, The Economist; Albrizio. S, Botta.E, Kozlu. T, and Zipperer. V. (2014).; Do Environmental Policies matter for productivity growth? Insights from new cross-country measures of environmental policies. Organisation for Economic Cooperation (OECD). Economics Department Working Papers No. 1176; Kathleen Dechant, Barbara Altman, Robert M. Downing, Timothy Keeney, Mark Mahoney, Abigail Swaine, . . . Post, J. (1994). Environmental Leadership: From Compliance to Competitive Advantage [and Executive Commentary]. The Academy of Management Executive (1993-2005), 8(3), 7-27. Available at: <http://www.jstor.org/stable/4165201>

needed to be stretched upon. Critical analysis of all these regulations will be done while comparing it with similar regulations in different countries. The paper also aims at discussing what all new regulations are needed and suggest amendments and additions to the existing laws in order to facilitate better environmental policies without affecting infrastructural growth in the country.

Objective of Research

- To discuss legal framework related to environment protection vis a vis Infrastructure in India.
- To discuss various approvals required under different environment related laws for Infrastructure development.
- To analyse monitoring and compliance protocols and discuss their effectiveness.

LEGAL FRAMEWORKS FOR ENVIRONMENT REGULATION AND COMPLIANCE IN INDIA

There are various environmental legislation in India has been promulgated to respond to the impacts of land use change, infrastructure development and industrialisation. While major acts are legislated in the Parliament at both the central and state level, India has several executive led rules, guidelines and other orders that are passed by the central and state authorities, which have governed how environment and related social impacts can be assessed, regulated and managed. These authorities are given delegated powers through the Acts to frame rules within the framework of the legislation.

There is a range of laws and subordinate legislations that lay down procedures and conditions under which approvals have to be taken on environmental parameters. Some of these present upfront restrictions for areas where no approvals can be granted and others present the requirement of detailed appraisals and public consultations based on which expert bodies would need to take considered decisions. In this section we present some of these to understand the range of regulatory approvals that industrial and infrastructure projects need to go through prior to initiating any construction activity. They also directly speak to the subsequent sections which identify the monitoring and compliance protocols as well as the institutional maps that show how these processes take place within respective institutions.

DIFFERENT LEGISLATIONS DEALING WITH ENVIRONMENT AND INFRASTRUCTURE

Environment Protection Act, 1986

The Environment (Protection) Act was passed in 1986. The overall objective of this legislation is driven towards the protection and improvement of the environment. It is the umbrella legislation that extends to water, air and land and how they inter-relate with both the human and natural environment. The Act vests with the Central Government through the Ministry of Environment, Forests and Climate Change (MoEFCC) the powers to take any

measure to control pollution and protect and improve the environment. The Central Government also has the power to direct closure or stoppage of any activity or cut the electricity, water or any supply to it as per Section 5 of the Act. Violation of any of the provisions under the EPA can lead to punishment under Section 15.

The legislation has also been brought to life through rules and notifications. Some of these include Environment Impact Assessment Notification, 2006 (EIA 2006), Coastal Regulation Zone (CRZ) Notification, 2011 and Hazardous Wastes Rules, 2016, which are discussed further in this section. There is a range of institutions and processes both for approval as well as compliance that have been created under specific notifications or rules.

Environment Impact Assessment Notification, 2006 (Eia 2006)

The EIA Notification 2006 lays out a detailed process for obtaining Prior Environment Clearance for any new projects or activities, or the expansion or modernisation of existing projects and projects seeking capacity addition with change in process or technology. Projects or activities are categorised as A and B, depending upon the extent of their capacity and size. For example, River valley projects of more than 50 MW hydroelectric power generation are Project A while river valley projects whose power generation is between 25 and 50 MW are Project B, as per the Notification.

Category A projects acquire their clearance from the MoEFCC while category B projects apply for clearances to the State Environment Impact Assessment Authority (SEIAA). The environment clearance process consists of four steps of screening, scoping, public consultation and appraisal. Expert Appraisal Committees (EACs) are constituted at the Central Government and the State Government or Union Territory level (called the State Expert Appraisal Committee), which screen, scope and appraise applications for Category A and Category B projects respectively. Category B projects can be further broken down to B1 and B2, thereby determining which projects and activities will require an EIA before approval. Since January 2016, institutions have been created at the District level as well and they too have been included in the EIA Notification for approving certain instances of mining of minor minerals. These are the District Environmental Impact Assessment Authority (DEIAA) and District Level Expert Appraisal Committee (DEAC)

Coastal Zone Regulation Notification, 2011 (Crz 2011)

The CRZ Notification regulates the setting up and expansion of any industry, operations and processes in the coastal stretches and water area upto the territorial limits of the country called the coastal regulation zone (CRZ). The CRZ is defined as:

- the land from the High Tide Line (HTL) to 500m on the landward side along with the sea front,
- the land between the HTL and 100m or width of the creek (whichever is less) on the landward side along the tidal influenced water bodies,

- the land between the hazard line and 500 from the HTL,
- the land between the HTL and the LTL, water area of the tidal influenced water body and
- the water and the bed area between the LTL and the territorial water limit.

The CRZ is further classified into 4 sub zones and regulates the use of these different sub zones differently. Under each area, a list of activities that are permissible and not allowed is given.

CRZ-1 It includes the area between the High Tide Line and Low Tide Line. It also includes areas that are ecologically sensitive and that have geomorphological features that play a role in maintaining the integrity of the coast and lie in the CRZ. For example mangroves, mudflats, salt marshes, turtle nesting grounds.

CRZ-2 It includes developed and urban areas, which are substantially built-up and have been provided with drainage and approach roads and other infrastructural facilities, such as water supply and sewerage mains.

CRZ-3 It includes underdeveloped and rural areas, which do not belong to either CRZ-I or II. It includes the coastal zone in the rural areas (developed and undeveloped) and also areas within municipal limits or in other legally designated urban areas, which are not substantially built-up.

CRZ-4 It includes territorial waters from the LTL to 12 nautical miles out to the sea and water area of the tidal influenced water body from the mouth of the water body at the sea upto the influence of tide.

Any application seeking CRZ clearance is appraised by the concerned State/Union Territory Coastal Zone Management Authority (CZMA). If the project seeking clearance is covered under the EIA Notification, 2006, the SCZMA forwards its recommendations to either the MoEFCC or SEIAA, as the case may be.² Other projects that are examined by the MoEFCC based on recommendations of the concerned SCZMA, are construction and operation of lighthouses, laying of pipelines, mining of rare minerals and construction projects of the Department of Atomic Energy and Defence requirements. The SCZMA forwards the recommendations on projects that are not listed under the EIA Notification to the respective SEIAA, except for construction projects of less than 20,000 sq m of built up area. Construction projects of less than 20,000 sq m of built up area are approved by the concerned State Planning Authority. Validity of the CRZ clearance is the same as the environment clearance or permission from the State Planning Authority, within which the CRZ clearance is also included.

The District Level Coastal Committees (DLCCs) are also consulted by the CZMAs in some

² Category A projects are examined at the national level by the MoEFCC. Category B Projects are granted clearance by the State Environment Impact Assessment Authority (SEIAA)

states like Karnataka and Tamil Nadu, as the CRZ Notification states that DLCCs will ‘assist’ the State CZMAs

Hazardous and other Wastes Rules, 2016

The Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 lays down the rules for management and transportation of hazardous wastes.

Authorisation or approval: Every occupier who is engaged in handling, generation, collection, storage, packaging, transportation, use, treatment, processing, recycling, recovery, pre-processing, co-processing, utilisation, offering for sale, transfer or disposal of the hazardous and other wastes obtains an authorisation from the State Pollution Control Board. The SPCB after scrutiny of the application, grants an authorisation which is valid for five years.

Establishment of a Treatment, Storage and Disposal Facility (TSDF): The state government, occupier, operator of a facility or any association of occupiers is responsible individually or jointly, or severally for identifying sites for establishing a facility for treatment, storage and disposal of the hazardous and other waste in a state. This is done as per the guidelines issued by the CPCB and after obtaining approval from the SPCB, on the design and layout of the facility.

Solid Waste Management Rules, 2016

The Solid Waste Management Rules 2016 was promulgated in supersession of the Municipal Solid Wastes (Management and Handling) Rules 2010. It lays down the regulations for handling solid waste. There are two aspects of these Rules which are elaborated further.

These rules lay down the conditions for setting up a solid waste processing and disposal facility. As per the rules, the setting up of a solid waste processing and disposal facility is to be facilitated by the District Magistrate/District Collector/Deputy Commissioner. Suitable land for the same is to be identified and allocated to the local authorities in co-ordination with the Secretary-in-charge of State Urban Development Department.³ The performance of the local bodies is reviewed on waste segregation; processing, treatment and disposal, once in a quarter and corrective measures if necessary are taken. The local authorities and the village panchayats are responsible for facilitating the construction, operation and maintenance of solid waste processing facilities on their own or with private sector participation or through any agency.

The rules also prescribe procedure for authorisation under which application is to be given by these authorities to the State Pollution Control Board or the Pollution Control Committee for the grant of authorisation for setting up waste processing, treatment or disposal facility, if the volume of waste is exceeding five metric tonnes per day including sanitary landfills.

³ Section 12, Solid Waste Management Rules 2016

Water (Prevention and Control of Pollution) Act, 1974

This Act was promulgated with an aim to prevent and control water pollution. It provides for setting up standards for discharge of effluents and sewage in the water bodies. The Water Act also provides for the formation of a Central Pollution Control Board and a State Pollution Control Board, which are given powers and functions to enact the provisions given under the Act. The PCBs are supposed to ensure that no surface water body is contaminated by industrial effluents or sewage.

Approvals related to Consent to Establish (CTE) and Consent to Operate (CTO): CTE is procured from the SPCBs before establishing or taking steps in establishing any industry, operation or process, or any treatment and disposal system or an extension or addition which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land. The consent letter contains conditions regarding outlet of discharge, nature and composition, temperature, volume or rate of discharge, period of consent etc.

While CTE is taken before actual commencement of work to establish, CTO is procured before actual commencement of work of production. Usually CTEs are valid for a period of 5 years. CTOs are renewed periodically. The period for which it is valid, is set by the concerned SPCB.

Air (Prevention and Control of Pollution) Act, 1981

This Act was promulgated to prevent, control and reduce air pollution including noise pollution. The Act also has a provision for declaring Air Pollution Control Areas, in which industrial plants cannot be set up without due permissions. It also provides for putting in place air pollution emission standards for industries.

Approvals related to Consent to Establish (CTE) and Consent to Operate (CTO): CTO and CTE are required to be taken from the SPCBs to establish or operate any industrial plant in an air pollution control area. Conditions given in the consent are concerning installation and operation of control equipment of said specifications, alteration or replacement of existing control equipment in, the conditions accordance with directions of the SPCB, running condition of the control equipment etc.

The Forest Conservation Act, 1980

The Forest Conservation Act, 1980 lays down the provisions that regulate the diversion of forestland for non-forest purposes. This is with the stated objective of ensuring long-term conservation of the forests in India, and reducing forest degradation. Any user agency (both government and non-government) has to seek prior permission from the Central Government before de-reserving any forest land, felling of trees or before diverting any forestland for non-forest use. The application for the same is moved through the Forest Department of the State Government, which is the final point of approval for forest diversion under this legislation. Non-forest use implies the breaking up or clearing of any forest land for the cultivation of tea,

spices, rubber, palms, oil-bearing plants, horticultural crops or medicinal plants and for any purpose other than re-afforestation

Permission is sought by applying for ‘Forest Clearance’. The Forest Clearance will consist of an approval along with certain conditions that try to minimise the impact on forest land. The forest clearance consists of general conditions like that of compensatory afforestation, rehabilitation of project affected families (if any) and also has specific conditions depending on the type of project it is. Proposals involving forest land upto 40 hectares (not including activities related to mining and encroachments) are handled by the Regional office of the MoEFCC. Proposals involving forest land above 40 hectares and those related to mining and encroachments are handled by the MoEFCC.

INTERFACE WITH FOREST RIGHTS

Following the passage of the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, forest land cannot be diverted and trees cannot be felled until the process of recognition of rights is determined and approval of the gram sabha (village assembly) is taken. The details of this are prescribed under the FRA, 2006. According to the MoEFCC Circular (dated 3/8/2009), the state government has to provide evidence of initiating and completing the process of settlements while sending the proposals for the diversion of forestland. It also has the requirement of the consent of the gram sabhas prior to any permission for diversion. This consent however applies only to non-linear projects (as per MoEFCC circular in 2013).

FINDINGS AND CONCLUSION

After analysing the above laws and provisions relating to Infrastructure development several conclusions can be drawn upon an understanding of the framework of the regulations.

Firstly, there is inconsistency in Information provided to understand compliance. Different regulatory institutions discussed in this paper, publicly disclose information about action taken against non-compliance through periodic disclosure, annual reports or while responding to parliamentary questions. However, there is no clear pattern or consistency that can be observed in these disclosure mechanisms. The public data on both approvals and monitoring is of different time periods and has no sectoral parity. Many of the regulatory institutions have been in existence for decades and are aware of their jurisdictional overlaps. E.g. Effluent discharge into rivers and streams is monitored both by the PCBs and the MoEFCC under different laws. Approvals under each of these laws refer to the protocols of other related legal clauses.

However, there needs to be collaborative effort to collate and present a comprehensive picture of enforcement and compliance of environment regulations rather than scattered disclosure. Since most of these legislations are under the jurisdiction of the MoEFCC, the ministry can take proactive steps towards ensuring this.

Secondly, merely issuing Notices cannot be considered adequate remedy. Analysis of different law in this paper reveals that the regulatory system is focused on issuing notices and giving directions against non-compliance. There are two issues which emerge from this practice. First, the number of notices highlighted by the PCBs or the government monitoring reports uploaded on the MoEFCC's website does not give clarity of whether the complaints were actually addressed after the notice was issued. The second and related issue is that of remedies. The issuance of notices, either proactively or against a complaint does not necessarily result in impacts being addressed. The case studies highlight that additional and much more nuanced effort is required to ensure that the show cause notices actually result in clean ups, or long term compliance to environmental safeguards. For instance, a notice on a complaint on municipal solid waste does not necessarily mean the village is relieved of living next to a municipal garbage dump.

Third most important concern which continues to affect the effectiveness of regulation is the basic implementation challenge, which has been highlighted through several studies before. Shortage of staff, large geographical areas under jurisdiction, difficulty of gathering evidence and ascertaining attribution are a few concerns that regulators themselves point to while highlighting the various difficulties faced in making compliance effective. There is a limited number of officials dealing with a large number of projects and monitoring their safeguard requirements. As approval rates are increasing each month and the enforcement and monitoring mechanisms of existing regulatory institutions remain weak, the burden of environmental and social impacts is borne by citizens.

Fourthly, it can be observed that there are confusions about what a regulation is meant to achieve. Due to fear of the law, affected communities could reject the use of an environmental regulation that can otherwise help address impacts that they face. This was brought out in the case study on the CRZ discussed in this study. The regulation which was enacted for protection of ecologically fragile coastal areas and coastal livelihoods was feared by communities who had heard that the law was meant to displace them from their homes. Other than this misinformation, confusion about institutional jurisdiction may result in an inability to seek action against an impact. For instance, the decision-making framework on groundwater extraction has remained a puzzle for those seeking an enforcement action. Outreach by regulators through training, community education, other than their own enforcement actions can actually bring violators into compliance.

Lastly, analysis of different regulations shows that none of the regulations have a formal mechanism of including compliance data into decision-making. Example, where compliance data could be used are project expansions, approvals for additional components of an existing project, approvals for new projects being proposed for an already impacted area or a fresh proposal by a proponent who has had a history of violations. It becomes imperative that the status of compliance in a geographical area, or the performance of the project proponent on compliance with mandatory environmental conditions is taken into consideration during decision making by regulators. Good record keeping on show cause notices, directions, action taken and compliance report records can only make this decision making more robust.

RENEWABLE ENERGY: SOURCES AND THE LAWS

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Abstract

In a rapidly developing country like India the need for energy consumption is rising steadily. Total dependence on fossil fuel is not feasible as the demand for fossil fuel like oil and coal will soon exceed the supply. It will also become very expensive which the common man will not be able to afford. India has a vast potential for renewable resources like biogas, biomass, solar energy, wind energy, hydro energy etc. This paper would like to study the efficacy of the law in tapping the renewable energy sources and finding out whether it will be able to meet the needs of the growing populace under the existing norms and during the period of vast urbanization.

Keywords: Renewable Energy, Energy Laws, Biomass and Biogas, Solar Energy, Wind Energy, Urbanization and Energy Needs

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INTRODUCTION

India is a developing country with a huge appetite for energy. It is the fourth largest energy consumer in the world (Pawar and Kaur, 2014). Most of the energy needs are satiated by importing fossil fuels like petrol, gas, oil and coal. With the soaring prices of petroleum crude it's become imperative for India to shift to more affordable sources. Indian cities are choking with exhaust fumes and hence for its populace to be able to breathe India has to think of clean energy resources like sun, wind, biogas, biomass etc. Municipal solid waste, biomass and ethanol are important untapped renewable resources. The Minister for State (Independent Charge) for Petroleum and Natural Gas, Dharmendra Pradhan, (2016) said that renewable energy is clean and can supplement fossil fuels like coal and petroleum. It is also derived from resources that are regenerative and do not get exhausted as they are replenished and in doing so reduces carbon emissions and increase economic development (Kumar, Kumar, Kaushik, Sharma, and Mishra, 2010). India so far is dependent on imports for nearly three fourths of its energy requirements but this should be reduced in any case. India has increased its power capacity from 1362 MW to over 112,058MW but it is not sufficient. India has taken major steps in electrifying villages but still 80,000 villages have not been electrified and nearly 44% of homes do not have access to electricity (Kumar and Meena, 2017).

India is committed to tackling climate change and must increase its renewable energy capacity to 175 GB by 2025 (Pradhan, 2016). If agricultural waste and urban waste is added to energy projects it will add one lakh crore to our economy. The waste to energy cycle will prevent pollution from burning biomass and the pollution hazard of dumping energy waste. Projects are being started to use municipal solid waste to energy. There is also a policy in place for ethanol-blending of petrol, biodiesel and to support ethanol production from agricultural waste.

In Delhi, Compressed Natural Gas is much preferred as fuel for mopeds, cars and buses to keep pollution under control. A beginning has been made but a lot needs to be done. With vast amounts of renewable energy resource available in India, it can achieve its target for energy with a significant contribution from renewable energy resources.

Renewable Energy Sources

Renewable energy sources are sources of energy that are constantly replaced by nature. They are not depleting any resources and do not cause harm to the environment as compared to fossil fuels. Fossil fuels don't replenish hence their supply is limited. Unlike the past, nowadays renewable energy collection and storage is competitively priced. The major types of energy sources are described below:

- *Solar Energy:* This is the most popular type of renewable energy which can be obtained from the sun. In a sunny country like India where the sun shines throughout the year except for the monsoon, sunlight can be trapped by using solar panels and convert it into electricity which can be used to power homes and business.

- *Wind Energy*: Wind blows from a place that is relatively cooler to the place that has heated up. Wind power can be captured using big turbines which produce electricity when they rotate. It is pollution free and wind farms are coming up at a faster rate.
- *Hydroelectricity*: Water is found in abundance in India and it can be harnessed to generate electricity. Running water rotates a turbine to produce electricity. This resource does not cause pollution and no emissions are generated. This source has an environmental impact as it can alter the course of a river, cause changes in water levels and habitats of fishes or tribes dependent on rivers.
- *Geo Thermal Energy*: Our planet Earth has heat energy trapped inside when it was formed. Radioactive degeneration is constantly taking place in the rocks deep down the surface of the Earth. Sometimes this energy is released in the form of volcanoes. This energy can be tapped by pumping water below the ground to the source to get it heated which rises in the form of vapour and drives turbines to generate electricity. Hot water can also be directly used to heat homes. In Iceland 90% of home heating is done with the help of geo thermal energy.
- *Bio Mass Energy*: Bio energy refers to energy coming from organic matter like plants and animals. It is a renewable resource as plants can be grown with energy from the sun. Other sources are wood, residue from agriculture and animal matter. Bio energy is said to be carbon neutral because they do not add to the carbon content of the atmosphere (Marsh, 2018). Whatever CO₂ is released is utilized by the growing trees. Biomass is also used to produce Ethanol and Biodiesel which fuels cars and trucks.
- *Ocean Thermal Energy*: Ocean thermal energy conversion uses the temperature difference between the warm surface water and the cold water below 600meters to produce electricity. It's a vast renewable resource with a capacity of billions of watts of electric power and a tremendously vast sea as the collector.
- *Hydrogen Fuel Cell*: Electrical energy produced in a fuel cell by converting hydrogen containing fuels through the electrochemical reaction of hydrogen and oxygen gases into water. It is also known as reverse electrolysis. If Hydrogen is used as fuel there are no pollutants and the end result is water.
- *Tidal Energy*: Tides used to produce electrical power are known as tidal power. Tides are formed when moon attracts the seawater. When water changes height from high tide to low tide, power is harnessed. In the same manner fast currents flowing through channels can be harnessed.

EFFICACY OF THE LAW IN TAPPING ENERGY RESOURCES

India is the only country in the world to have a ministry for renewable energy development – MNES, the Ministry of Non-Conventional Energy Sources. It has the largest program in the world for renewable energy systems. India has taken the following administrative actions for the promotion of renewable energy.

- Formation of Electricity Regulatory Commission 1991
- Mandatory Environmental Audits for Power Projects 1992
- Energy Conservation Bill 2000
- Renewable Energy Promotion Bill 2005

Under the Electricity Act, 2003, the Central Government in consultation with the State Government is preparing national electricity policy and tariff policy for optimum utilization of resources including renewable sources of energy. It has the following sections:

- *Section 86 (1) (e):* The State Commission shall promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of distribution license.
- *Section 3 (1):* Government of India shall, from time to time, prepare the National Electricity Policy and Tariff Policy, in consultation with the State Governments for developing the power system based on optimal utilization of resources such as coal, natural gas, nuclear, hydro, and renewable sources of energy.
- *Section 4:* Government of India shall, after consultation with the State Governments prepare a National Policy permitting stand-alone systems (including those based on renewable sources of energy) for rural areas.

SATISFYING THE NEEDS OF THE GROWING POPULACE

The Ministry of New and Renewable Energy (MNRE) intends to increase clean power production to 175 GW by 2022. Many other countries are continually stepping up their efforts for clean energy. From wind turbine Denmark could generate 140 % of its electricity requirements on a windy day. Germany came close to running the country on wind and solar power for a day. Portugal could power the country for four and a half days using renewable energy. Costa Rica could power the country for 250 days using renewable energy. Many countries are aspiring for this goal and India certainly cannot reach it in the near future but rapid strides are being made in that direction. To reach the goal of 175 GW --- 100 GW targets solar energy. Our capacity now is 8 GW and we need to increase annual production by 15GW. India needs huge investments to the tune of US 100 billion dollars. The energy ministry is trying to attract domestic and foreign private investors. It has got commitment for \$20 billion from Japan's Softbank in partnership with Taiwan's Foxconn and India's Bharat Electronics.

India is a vast country and 300 million people are without power and millions more with intermittent supply. To satisfy their energy demands public – private partnership funding is necessary. Government offers feed – in – tariffs (amount paid to individuals who generate clean energy) and a 10 year tax holiday for projects registered before April 1, 2017. All states compulsorily have to purchase a part of their energy from green sources. Sometimes the government cuts down on benefits which discourage investment.

The money collected from coal tax funds (NCEF) National Clean Energy Fund which is not utilized to the fullest only 40% was allocated to the fund.

Clean energy projects will be unsuccessful without a robust power grid. The head of Energy systems at Panasonic India said that 15 – 20 % of total renewable energy is wasted due to low

capacity of power grids. The making of a green energy corridor is necessary which could take up five years.

MNRE is solely focusing on solar energy but India has a large potential for wind energy so proportionately its production must be stepped up.

Energy plan for 2030 involves 850 GW of power from renewable but it amounts to only 40% of the total need for energy. The remaining energy is coming from coal as it is cheaper. India should give incentives for investing in renewable energy and also adopt cooperative model of investment for solar panels and set up wind farms. Rooftops could be rented by companies to produce solar power and then sell it to the grid and give the benefits to the house owners.

CONCLUSION

Taking into account that the Energy sector falls in the Concurrent List where cooperation from the states to the centre is necessary for implementation and execution of rules framed regarding renewable energy resources. The centre has taken adequate steps by forming a ministry to look over the affairs of the clean energy sector and with the drafting of the Energy Act 2015 it has laid out mandatory national targets. India has taken large strides and with the cooperation of the state governments it is not impossible to realize the dream of power for all by 2030 with 40% of energy needs being generated by renewable energy sources. India on the whole has huge potential only that it needs to be tapped and sustained. India should systematically plan to increase energy produced by renewable sources to have a clean environment.