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EDITORIAL

This volume covers multiple issues related to environment, patents and innovation, migration and foreign policy.

Global Climate change deliberations are always marked by North-South dichotomy, with the World always trying to find an answer to a pertinent question – who gained from these negotiations- the South or the North? Depending upon the perspective, answers vary. Is the world safe after every deliberation? If the gainer is not the environment, the planet earth, the solar system, everyone loses in the end. The paper by Konoorayar and Suseela overviews the confrontation among various stakeholders at the cost of environment.

The post-TRIPS scenario in India made global integration of its pharma industries. This is profusely felt in the national pharmaceutical innovation system. In their article, Abrol and Singh investigates the achievements and limitations of the post-TRIPS innovation policy and find the weak link between domestic firms and public sector research organisations in India. The paper induces government to rethink the strategy to get domestic firms to contribute to the system building activities at home.

In the present information economy, ‘information’ is a major commodity, and ICT facilitates generation and transaction of this ‘information’. This creates a deep divide between nations that produce more information and lesser information. All the major information companies are based in the US, say, Google, Facebook, LinkedIn etc. All these companies generate their basic commodity, ‘information’, from the general public beyond the national territory and amasses huge profits from peripheral regions by enabling the multilateral trade of ‘information’ generated within the national boundaries of peripheral economies. In his article, Many argues that ‘information’ is the key factor of production in an information economy and this systematically makes the developing nations dependent on the developed.

Yasser Arafat was the champion of Palestinian nationalism and an embodiment of their movement against imperialism, colonialism and freedom from Israeli occupation. His death saw the end of a long involvement of political struggle against Israel and its close ally US. Arafat’s exit from the Palestinian political scene happened during a critical phase of Palestine-US relations and Palestinians themselves. The paper by Prasad discusses developments from the end of Arafat era to the democratic elections and to the new Palestinian president and the impact of this on the Palestine - US relations.

In his paper, Reddy examines the evolving Indo-Afghan relations in the context of the post Bonn Conference scenario in the West Asian region. Because of the increased interest shown by the US and European countries in the path of development chosen by Afghanistan, it is scrutinized by IR scholars. India is also compelled to modify its policies to face the changing situation in South Asia since terrorism emanates from Afghanistan and Af-Pak region. In the light of a comfortable relations with Afghanistan, New Delhi needs to be proactive.

Being the nation that shares borders with almost all the South Asian nations, and being a regional power, the role played by India in architecting the South Asian Free Trade Area (SAFTA) is significant. The paper by Pushia and Jayesh highlight recent trends in India's total trade relationship with SAFTA economies, in general, and with each members of the trade bloc, in particular, from 2010 to 2016. The paper attempts to find establish the growth rate of exports and imports in South Asia and analyse India's trade with south Asian countries. The paper states that both imports and exports have increased over time except for the emergence of negative export trade balance with Pakistan and negative import trade balance with Nepal and Maldives.

The state security- traditional and non-traditional- in south Asia are at stake. The paper by Siddiqua and Mathew assesses the state security challenges related to refugee or illegal migrants from other south Asian countries. The refugees living in inhuman conditions and are in a humanitarian crisis. They are also posing security threat for the host country. Among the eight countries of South Asia, only Maldives is free from such problems. The refugee crisis is further aggravating the issues of smuggling of narcotics, small arms and other exotic weapons, and the growing nexus between arms dealers, drug traffickers, militants and frustrated populations is putting an ominous shadow on the security aspects in South Asia. The paper sheds light on the relatively overlooked state security issues caused by the illegal migrants and refugees in South Asia, especially in Bangladesh and India.

The migration in South Asia nations is intense inside the borders too. For instance, in the last few years, Kerala has been witnessing a huge influx of migrant labour from different parts of the country, especially from Northeast India, that shares borders with Bangladesh. It is notable that the North east region known for ethnic, cultural and linguistic richness is also a hotbed of conflicts and human rights violations. This acts as push factor that propels migration from these states. This has become one of the major sources of Kerala's migrant workers. An examination of the push factors of migration, from the four Bodoland area districts, along with the heterogeneous, ethnic and demographic composition of Northeast Indian people – which constitutes a large chunk of Kerala's migrant workers, often overshadowed by the collective nomenclature of 'Bengali Bhai' – would be of significant interest, to understand what attracts them to the 'Kerala model of development' even at the cost of their own identity. The article by Paul and Brahma examines these factors.

Editor

Prof. Mohanan B. Pillai

Building the Global Climate Change Regulatory Regime: An Overview

Vishnu Konoorayar. K * & Jaya Vasudevan Suseela **

Abstract

An analysis of the developments in climate change from the perspective of North-South divide raises a fundamental question i.e. who gained from these negotiations; the South or the North? There are different perspectives to this question and answers vary depending upon the perspective. However, if the gainer is not the environment, the planet earth, the solar system, then everyone loses in the end. This paper overviews the confrontation among various stakeholders at the cost of environment.

Key Words: Climate Change, Environmental Protection, International Environmental Law, Global Climate Change Regulatory Regime, UNFCCC, Kyoto Protocol, Paris Agreement.

1. INTRODUCTION

The threat of climate change was sufficiently established through scientific evidence by the 1980's, which pressurized the policy makers around the world to search for various options (Joseph (1998)). They were also aware that, as a global phenomenon, climate change would hit both the developing and the developed countries with no particular preference. It is also a documented fact that the developing countries are likely to be the most vulnerable to the impact of climate change due to their general dependence on agriculture and more significantly for their limited capacity to *adapt* to the changed environmental demands (lack of adaptive capacity) and capacity to *mitigate* their GHG emissions (lack of mitigation capacity).¹ The fact that the majority of low-lying and island nations fall within the *Third World* also entails a more obvious susceptibility to climate change for developing countries (Lal 1993). It also appears that the international response to climate change will have major impact on life-style choices of individuals to the extent that it would require significant modifications in practices relating to consumption of resources. All of this will incur huge cost and would therefore have impact on international trade and the state of economy worldwide (Daniel 1993).

Responding to these concerns, the UN General Assembly (hereinafter referred to as UNGA) established the 'Intergovernmental Negotiating Committee' (hereinafter referred to as INC) for

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drafting a global legal standard in December 1990. The INC submitted the draft Framework Convention on Climate Change (UNFCCC) to the UN General Assembly, which was adopted at the United Nations Conference on Environment and Development (UNCED), 1992 (also known as Rio Summit).² The UNFCCC fundamentally aims at stabilizing the concentration of Greenhouse Gases (GHGs) in the atmosphere of the earth at a level that will prevent irreversible or dangerous interference with the global climate.³ A timeframe is also set for such a stabilization so as to be “sufficient to allow the ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.”

However, the non-binding language of UNFCCC has been a reason for many authors to criticize it. For some scholars, the UNFCCC was disappointing because it had failed to include binding stabilization and reduction commitment and suggests only vague commitments. They also pointed out its failure to include a global climate change mitigation fund and a mechanism for transferring technology as sought by the developing nations. However it was also supported by many authors as a success mainly because of the fact that it unambiguously recognized the ‘climate change as a threat’ (Soltan, 2009). The UNFCCC also set long-term goals to stabilize GHG emissions ‘at a level that would prevent dangerous anthropogenic interference with the climate system.’⁴ Thus in the making of the Global Climate Change Regulatory Regime (hereinafter referred to as GCCRR),⁵ there was a visible confrontation between the developed countries and the developing countries.⁶ This paper overviews this confrontation.⁷

2. AN INTRODUCTION TO UNFCCC

The negotiating history of the UNFCCC roughly began in the year 1988 when the Intergovernmental Panel on Climate Change (hereinafter referred to as IPCC) was created under joint patronage of the World Meteorological Organization (hereinafter referred to as WMO) and the UN Environment Programme (hereinafter referred to as UNEP). The purposes of the creation of the IPCC were aptly identified by the UNGA in its ‘resolution endorsing the establishment of IPCC’. It said that “the identification and possible strengthening of the relevant existing international legal instruments having a bearing on climate... (and) elements for inclusion in a possible future international convention on climate change” were the purposes of IPCC.⁸ However, the IPCC was severely also criticized from the very beginning. Since the majority of the members of the IPCC were from developed countries, the developing countries opposed the new climate convention being negotiated and drafted under the auspices of IPCC.⁹

The year 1989 was another milestone in the history of GCCRR. It was during this period that many powerful industrial houses in the USA, worried about the ill consequences of climate change on their business, started lobbying and pressurizing the USA for supporting the creation of new climate change regime (Bodansky, 1994).¹⁰ As a consequence of the efforts of USA, the UNEP commenced the measures for negotiating an international convention on climate change. However, because of the complexity of the problem, there was soon a consensus that such a

negotiation should take place under the auspices of the UNGA and not under a specialized agency/organ like the UNEP or the WMO (Borione and Ripert, 1994). It was mainly because of the concerns of the developing countries that the IPCC 'did not ensure their participation in the process and did not adequately represent their interests'.¹¹

The negotiating history also shows that there were two options available for the stakeholders. One was to have a framework convention with additional binding protocols and the other one was to have a specific binding convention. The UN, under pressure from the developed countries, supported the former and called on states to "prepare, as a matter of urgency, a framework convention on climate change and associated protocols containing concrete commitments in the light of priorities that may be authoritatively identified on the basis of sound scientific knowledge, and taking into account the specific developmental needs of the developing countries."¹² Thereafter the UNGA established the INC with a mandate to pursue a single intergovernmental negotiating process under the auspices of the General Assembly (Djoghla, 1994).¹³

Throughout the negotiations, the USA, as supported by the various European States, opposed the inclusion of any binding targets for stabilization and reduction of emission. The various clubs of developed countries demanded that the rule of 'Common Responsibility' (Rajamani, 2006).¹⁴ should be the basis of emission reduction under the UNFCCC. Their main argument was that climate change is a worldwiden menace and all the states have an equal responsibility towards its mitigation and prevention. However, the developing nations demanded a different treatment altogether. Instead of 'Common Responsibility', they demanded 'Common But Differentiated Responsibility' (CBDR) to be the foundational rule of UNFCCC. They also urged that the responsibility should be fixed after considering,

- (i) each state's contribution to environmental harm in the past, and
- (ii) their respective capabilities based on equitable grounds of fairness and justice.

This continued until the last session of the INC, during which a compromise was reached and CBDR was opted to be the foundational principle. However, as part of the compromise, targets and timetables were replaced by a softer, non-binding language, which mandates the developed countries to report their policies and actions towards cutting down emissions at par with the prescribed base-year level of 1990.¹⁵

Nevertheless, during this stage the developing countries contended that they have no sufficient resources and hence the proposed convention should give priority to their economic development. In this regard, they demanded the transfer of technology and the transfer of finance to bring in the idea of distributive fairness or equitable sharing of the burden of environmental protection. The developed countries opposed this requirement since they were well aware of the financial burden and other related liabilities this would attach with them. Instead they pleaded for

a contributory funding mechanism, which they called the ‘Global Environment Facility (hereinafter referred to as GEF)’. But the developing countries were skeptical of this suggestion as the governance structure of the GEF was proposed to be under the control of the developed countries (Dowdeswell and Richard J. Kinley 1994). However, there was no consensus among the developing countries during this period also. For instance, the island and small low-lying states formed a club of their own known as the ‘Alliance of Small Island States’ and demanded more stringent provisions for financial support and transfer of technology in the proposed GCCRR.

The UNFCCC¹⁶ is often referred to as an umbrella convention. However, according to some authors, it ‘falls somewhere between a framework and a substantive convention’. According to them it establishes more comprehensive obligations than the usual umbrella conventions and at the same time, ‘falling short of the detailed commitments’ (Bodansky, 1993). The provisions of UNFCCC, which contains a total of twenty-six articles and three Annexes, may be roughly clubbed under the following four parts:

- i. Introduction;
- ii. Commitments;
- iii. Institutions under the UNFCCC; and
- iv. Amendments *etc.*

The Introductory Provisions consist of the preamble, definitions¹⁷, objective of the UNFCCC and the principles guiding the implementation of UNFCCC. The Preamble says “...that the largest share of the historical and current global emissions of greenhouse gases has originated in developed countries, that *per capita* emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and developmental needs.” Thus, it places an important space for the issue of fairness. Importance is also given to the principle of CBDR and the dangers to the low-lying and small island developing countries due to climate change.¹⁸ Though the language of the Preamble is only inspirational, it definitely forms part of the context in which the other provisions of the UNFCCC could be interpreted and particularly, in the light of the Vienna Convention on the Law of Treaties, 1969 Article 31.¹⁹

The principle of *sovereign equality* of states stipulates that states are bound as equals (at least theoretically²⁰) as far as the international agreements are concerned. The UNFCCC is an exception to this rule, by providing varied rights and obligations,²¹ though it is not the first international environmental instrument that provides such a differentiated treatment.²² The principles that are recognized under the UNFCCC include:²³

- (i) The principle of Inter-generational and Intra-Generational Equity;²⁴
- (ii) The Principle of Equity (Equitable Distribution);²⁵

- (iii) The Principle of 'Common But Differentiated Responsibilities' (CBDR)²⁶;
- (iv) The Principle of Sustainable Development;²⁷ and
- (v) The Precautionary Principle.²⁸

Regarding these Principles as enunciated in the UNFCCC, it has been opined that “considered overall, the phrasing of the principles reveals several, sometimes opposing strands. For example, phrases emphasizing environmental integrity are linked to the cost-effectiveness of measures. Similarly, the mitigation measures should not come at the cost of development for the developing countries, and mitigation measures should not constitute an unjustifiable restriction on the international trade.”

Further the scope of CBDR as recognized by article 3 of UNFCCC²⁹, is different from the CBDR that is recognized in Articles 6 and 7 of Rio Declaration.³⁰ The CBDR recognized under *Rio* assigns a leadership role to the developed countries based on their enhanced contribution to environmental degradation in the past. But the CBDR under UNFCCC contains no reference to such enhanced contributions from developed countries based on environmental degradation that they have caused in the past. As noted by a writer, the “...ambiguity created in the notion of CBDR due to differing terms of the UNFCCC Article 3 and Rio Principle 7 has resulted in two incompatible views on the basis on which responsibilities between Parties are ‘differentiated’. One, that the CBDR principle is based on the differences that exist with regard to the level of economic development alone’. And, the other that the CBDR principle is based on ‘differing contributions to global environmental degradation and not in different levels of development’ (Rajamani, 2012). At the same time it could be argued that the CBDR under UNFCCC is enriched by the CBDR under Rio Declaration, resulting in contribution-based responsibility even under the former. However, despite the possibility of broad interpretation of CBDR under UNFCCC, the language used in Article 3 ensures that it is not a general law but only to parties to the UNFCCC. Further, the use of the word *should* in UNFCCC Article 3, instead of *shall* do not indicate the binding nature of the duty of the developed countries. From the beginning the South had argued that the North, due to their historical high *per capita* emission accept the highest accountability for increasing emissions.

Article 2 of the UNFCCC, which the IPCC calls as “Ultimate Objective of UNFCCC,”³¹ states its objectives as “the stabilization of greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system”. The article prescribes that it “should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.” However, even after two decades of the adoption of UNFCCC, it remains a fact that, ‘anthropogenic climate change’ still adversely affects the environment. But at the same time, any costly mitigation measures might also adversely affect the economic development. Since the inception of the UNFCCC, this has been remaining as the major dilemma for the policymakers around the world.

3. COMMITMENTS OF STATE PARTIES UNDER THE UNFCCC

Towards achieving the objective enunciated in Article 2, but based on the Principle of CBDR, the UNFCCC classifies its signatories mainly into two groups. However, the countries that do not fall in either of these two groups are generally considered as the third group. The following table shows the classification in detail.

| | |
|-----------------------|---|
| Annex I countries | Industrialized countries and economies in transition |
| Annex II Countries | Developed countries who pay for the costs of developing countries |
| Non-Annex I countries | Developing Countries and the Least Developed Countries |

This classification aims at bridging the economic divide amongst signatories by stipulating the common but differentiated responsibility as the foundational rule of global emission reduction. According to the UNFCCC, the following are the general commitments, *i.e.* the common responsibility of all the signatory states. However, such a commitment is subject to the ‘differentiated responsibility’ after considering each country’s specific national as well as regional developmental priorities and objectives.³²

However, as already noted above, the UNFCCC article 4 (2) assigns the Annex 2 countries, special commitments towards this end and they also have a responsibility to lead with their own commitment. They are committed to adopting reducing emissions. They have the duty of reporting periodically on the measures taken by them, “with the aim of returning individually or jointly to their 1990 levels of these anthropogenic emissions of carbon dioxide and other greenhouse gases.”³³ According to another view, even when these countries met the record, it was not because of their commitment to the UNFCCC, but because of the economic factors that were unrelated to the mitigation measures, such as economic collapse and recession that eventually lead to the closure of many industries in those countries.³⁴

With regard to the reporting mechanism, similar to other international conventions such as the ICCPR, the UNFCCC also has an inbuilt State Reporting and Communication Mechanism.³⁵ Under this mechanism, each state is required to report the inventories and the applicable methodologies that reinforce the Conference of Parties (hereinafter referred to as COP) through Secretariat. While the requirement of reporting is on all parties, the Annex I states must include comprehensive accounts of policies and measures to reduce emission.³⁶ But the developing countries have a ‘Differentiated Responsibility and they are bound to submit their first report only within first three years of the adoption of UNFCCC or when sufficient financial resources are available with them. However, the Least Developed Countries (LDCs) are required to submit reports at their discretion.³⁷ This reporting and monitoring mechanism is an important aspect of the functioning of UNFCCC. This mechanism has become the notable feature of multilateral environmental agreements

(Werksman, 1999). However, concerns still exist about the effectiveness of the reporting procedures also. It can be seen that, very often, countries tend to submit their reports concealing the actual facts that would go against their interest.

The commitment to transfer technology includes "...processes covering the flows of know-how, experience, and equipment for mitigating and adapting to climate change among the different stakeholders such as governments, private sector entities, financial institutions, non-governmental organizations, and research/education institutions." Questions pertaining to transfer of technology are related to the principle of CBDR in a number of ways. Firstly, to manage the emission of GHGs at minimum, it is critical that resource-intensive, less polluting technologies are used in economic and industrial activities globally. If the developing countries continue to use the polluting technology, contending that the developed countries used such polluting technologies in the past, its impact on global climate would be disastrous. It is not fair to compel the developing countries to reduce their economic activities simply because their technology is outdated and polluting. Transfer of technology is the only answer to such a problem. As discussed earlier, the UNFCCC requires the Annex II countries to transfer Environmentally Sound Technologies (hereinafter referred to as ESTs) to developing countries.³⁸ Similar provisions were also included in other international environmental law provisions.³⁹ Though the developed countries are required to promote, facilitate, and finance the transfer of technology to the developing countries (Gatan, 1998), generally, these duties have remained only in papers. The provision of technology transfer under the UNFCCC does not even mandate the transfer of technology as a binding obligation, but only requires the countries to take 'all practicable' steps. Similarly, the Agreement on Trade-Related Aspects of Intellectual Property Rights (also known as TRIPS), lays the rules of protection for intellectual property, have also proved to be an obstacle in the effective transfer of ESTs.

Recently, the USA moved to the WTO challenging India's subsidies and 'stipulations to buy domestic products' in India's solar programme under its National Solar Mission.⁴⁰ Prior to 2013, India had permitted the use of imported 'thin film solar cells' to be used in large-scale solar projects owing to the low domestic capacity to manufacture such cells. The USA was the largest beneficiary of such a policy and its exports of thin film solar cells had dominated the solar markets in India. Meanwhile, India developed technology to produce these cells, which resulted in a policy changed and stipulated that even the 'thin film solar cells' used in solar projects should be manufactured domestically and cannot be imported from other countries to avail the subsidies. The US with a fear to lose the largest solar energy market in the world⁴¹, filed the case with WTO alleging that India have violated the General Agreement on Trade and Tariffs (hereinafter referred to as GATT),⁴² the Agreement on Trade-Related Investment Measures (also known as TRIMS)⁴³, and the Agreement on Subsidies and Countervailing Measures (also known as SCMs),⁴⁴ while providing a more favourable treatment to domestic solar producers and products than to foreign ones (Principle of National Treatment). In its 2016 report, the WTO dispute settlement panel decided that the 'domestic content requirement' in the Indian national solar programme is a 'protectionist measure' and is against the principle of national treatment.⁴⁵ Though this decision is in consonance with the existing

WTO trading rules, it undoubtedly goes against the spirit of developing countries in producing clean energy.

4. INSTITUTIONAL ARRANGEMENTS UNDER THE UNFCCC

In this context, it is also important to consider the nature of its supplementing institutions. This is mainly because once a new set of rules are established in a regime, the ongoing level of fairness will be greatly influenced by the structure and functioning of its various organizational, administrative and advisory bodies (Bishop, 2000). Thomas Franck (Franck, 1995), in this regard states thus:

The extent to which institutions ...are able to do these things [*i.e.* identifying issues, negotiating terms, monitoring compliance, reporting violations, adjudicating disputes *etc.*] will help shape the texture of the normative system and the capacity of the rules to pull towards compliance. The capacity of an institution to support a system of norms will depend, significantly, on whether it is perceived as a legitimate institution operating fairly.

In this regard the UNFCCC establishes various organs such as the COP, the Secretariat, the Subsidiary Body for Scientific and Technological Advice (also known as SBSTA), the Subsidiary Body for Implementation, and the Financial Mechanism and the Global Environmental Facility (also known as GEF). The COP was created under article 7 of the UNFCCC as the supreme body of the UNFCCC, which shall meet every year. The COP can take decisions effectively implementing the UNFCCC including “exercising such other functions as are required for the achievement of the objectives of the Convention.”⁴⁶ The rule of decisions through consensus⁴⁷ has caused parties to block the consensus if they do not support a particular decision (Oberthur and Ott, 1999). In this context it is commented that the, “exponents of delay and obfuscation were thus handed a veto because the rule of consensus applies.” The COP is beneficial, as it involves the parties in an ongoing multilateral, quasi-legislative process that is time-efficient, flexible and effective. Kirsten Bishop also says that these meetings are useful as they provide a regular forum for the elaboration of climate change policy, providing an avenue for involvement by NGOs and a focal point for public attention (Bishop, 2000). At the same time, fairness in the decisions made by the COP are to be ensured because as has been stated, “the institutional dynamics of multilateral regimes..., may be such as to de-couple decision making within the regime from the traditional national processes of control and supervision. In this sense, the new type of environmental regime may signal an emerging *democratic deficit*” (Handl, 1991).

Similarly, the UNFCCC under article 8 creates a Secretariat, which will act under the COP. The key purposes of the secretariat are to create preparations for the meetings of the COP and also to offer all additional support and management. Furthermore, the secretariat aims at encouraging active involvement of NGOs, Industry, and other stakeholders.⁴⁸ Another subsidiary organ under

the COP is the Subsidiary Body for Scientific and Technological Advice (SBSTA) founded under article 9 to provide scientific and technical assistance to the COP. An example of such function includes promoting the transfer of environmentally sustainable technology.⁴⁹

Through the creation of SBSTA, the GCCRR is able to establish “a body of commonly agreed-upon technical knowledge that is widely accepted as a valid basis for the political negotiations.” (Gehring, 1990). The expectations of sharing the scientific knowledge by establishing SBSTA, in fact sets the “base for the regime’s priorities, policies and strategies.” Peter Hass says that the SBSTA and also IPCC are institutional representatives of the community of climate change scientists who play a vital role “in articulating the cause-and-effect relationships of complex problems, helping states identify their interests, framing the issues for collective debate, proposing specific policies, and identifying salient points of negotiation” (Hass, 1992). The involvement of scientific institutions such as SBSTA is expected to enhance the perception of fairness within the GCCRR by increasing the diversity of participants and assisting in consensus building, especially in relation to matters that are highly technical. However, there is also a risk that the developed countries might dominate the SBSTA and thereby reflecting their policy perspectives on climate change negotiations as well.

The Subsidiary Body for Implementation (SBI) founded under article 10 to support COP in assessing and reviewing the implementation of UNFCCC. Examples of its functions include reviewing of national communications on emission inventories from members and also financial assistance provided to non-Annex-I parties. Further UNFCCC has also created a Financial Mechanism under article 11 of the UNFCCC to provide funds to the developing countries including transfer of ESTs.⁵⁰ The financial mechanism, GEF was established in the year 1991 by the World Bank. It has been described as the World Bank’s most significant effort to proactively protect the environment. Since the very beginning, both the developing and the developed countries had been concerned about the lack of transparency and democracy within the GEF. As a result, the GEF underwent a restructuring in the year 1994 and reduced the decision-making powers of the World Bank and created an independent governance mechanism.

5. AN OVERVIEW OF THE KYOTO PROTOCOL 1997

The Kyoto Protocol⁵¹ to the UNFCCC sets out binding obligations on the developed countries to mitigate their GHG emissions. The Protocol was adopted in the year 1997 at Kyoto in Japan, and it was entered into force in the year 2005. As of today, 192 states have signed this Protocol. Barring the USA, Canada, Afghanistan, Andorra and South Sudan all other UN members have ratified this Protocol.⁵² Under this Protocol, Annex I countries, which include Thirty-Seven industrialized countries and the European Union, commit themselves to limiting or reducing their emissions of GHGs at a stipulated percentage on the basis of the base year 1990.⁵³ Whereas other members have only general commitments, the Annex I countries under this Protocol had agreed to reduce the GHGs at 5.2 percentage (on average) of their 1990 emission rate (base year) during the first commitment period 2008-2012, which was not achieved and Kyoto entered 2nd commitment period

at Doha from 2013 to 2020 (Doha Amendment to the Kyoto Protocol). The parties undertook to reduce GHG emissions by at least 18 per cent below 1990 levels during this period. However, so far, out of the Annex-I countries that have binding targets, only 7 have ratified and out of the total signatories only 66 have accepted the Doha Amendment as of 2016.⁵⁴

When the first COP met at Berlin in the year 1995, it had reviewed the goal of 'emission reduction to 1990 base year level by 2000'. However, it was evident that Annex I countries were unlikely to achieve that target.⁵⁵ It was clear that target year 2000 was no near, that it was incapable to fight climate change in a significant way. Considering the functioning of IPCC, policy makers were quite certain that for the realization of the targets, binding commitments would be required. But the introduction of such binding commitments was opposed by the clubs of oil producing and exporting countries as well as by the American industrial lobby. However, rejecting such opposition, COP-I reached an agreement, which is called the 'Berlin Mandate'. This Mandate reinforced UNFCCC's aims through additional protocols. It was also decided that the negotiations on the said Protocol were to be completed by 1997, so that it could be reported to the third session of the COP. However, the developing countries from the beginning objected that in accordance with the principle of CBDR, the proposed protocol should not bring any fresh commitments for them. Thereafter, the 'Ad Hoc Group on the Berlin Mandate' was created to supervise the negotiation of the new instrument which met on eight occasions during 1995-97 and produced a timely drafting of the provisions for the COP-3 in Kyoto. The key issues were:

- (1) Specific policies and measures to be included;
- (2) Targets for emission reduction commitments; and
- (3) Concerns of the developing country chiefly concerning to economic assistance and transfer of ESTs.

During this stage, the EU recommended detailed measures for reducing emissions, such as energy efficiency requirements to gadgets, machines and vehicles to carbon taxing. But this regulatory approach in the nature of 'command and control' was opposed by the US, which favored to hold flexibility. Similarly, the OPEC countries did not support the idea of carbon tax. However, after much negotiation the USA also conceded to the binding targets at COP-2 that took place at Geneva. A set of comprehensive rules for putting the Protocol into practice were finalized at COP-7 in Marrakesh, Morocco, in the year 2001 (commonly referred to as the Marrakesh Accords).

Article 2(1) speaks about policies in non-binding language such as the improvement of energy efficiency, the protection and enhancement of sinks, the growth of renewable forms of energy etc.⁵⁶ The quantification of emissions, binding targets for reducing those emissions, and formulating timetables are the main purposes of Kyoto Protocol. As per article 3 the developed countries agreed to 'individual and differentiated emission targets' for reducing aggregate and individual emissions by a minimum 5 percent below that of the base year. At the same time one of

the COP-3 resolutions requires that ‘emissions trading schemes’ may only be executed with joint agreement of the countries.

6. FLEXIBILITY MECHANISMS UNDER THE KYOTO PROTOCOL

The Kyoto Protocol introduces three flexible trading mechanisms *viz.*, (i) the Joint Implementation; (ii) the Clean Development Mechanism, and (iii) the International Emissions Trading. The following part of the thesis would be an attempt to examine these three mechanisms in detail to understand its merits and demerits.

1. **Joint Implementation:** Joint Implementation (hereinafter referred to as JI) as per articles 4(2)(a)⁵⁷ and (d)⁵⁸ of the UNFCCC and article 6 (1) of the Protocol⁵⁹ is a project-based mechanism between two annex I countries. Investors of one Annex I country implements low emission projects in another Annex I country. The emission reductions achieved are then sold by the investor country in the carbon market or credited against their target.
2. **Clean Development Mechanism:** The second flexibility mechanism under the Kyoto Protocol is the ‘Clean Development Mechanism’ (hereinafter referred to as CDM) (Naoki Matsuo, (2003)).⁶⁰ Unlike JIs CDMs is between a developing country and an investor annex I country. There are two goals for the CDM as per article 12.⁶¹ Firstly it helps the developing countries in accomplishing sustainable development. Secondly it helps the Annex I countries in achieving their emission reduction targets (Kenber, 2005). In other words the credits earned by an investor country in a developing country add to the cap of the former (Oberthur and Ott, 1999). At the same time the emission reduction claimed must be ‘measurable’ and additional to any emission reduction in the absence of CDM, which is called as the *Additionality Criterion* (Axel Michaelowa, (2005)). Detailed rules have been developed⁶² and a CDM Executive Board comprising of 20 members annex I and developing countries has been established to supervise CDM projects.⁶³ The CDM helps the developing countries to gain technology and resources and helps the developed countries in complying with their targets.⁶⁴ At the same time there are problems with the CDM market (Michaelowa and Purohit 2007). Some study states that “...as it is not possible to ensure that every credit from ...the CDM represents a real, measurable, and long-term reduction in emissions, the use of carbon offsets in a cap-and-trade system can potentially undermine the system’s integrity.” The CDM has also been criticized for its uneven regional distribution. The following table gives an idea about the regional distribution of CDMs as of 2016 (calculated in terms of CERs):

| | |
|-------------------------|-------|
| Asia Pacific | 81.8% |
| Latin America | 13% |
| Africa | 2.9% |
| Europe and Central Asia | 1% |
| Middle East | 1.3% |

This table above indicates that Asia and Latin America accounts for a major share of CDM projects indicating an uneven involvement of other parts of the world. In this context, countries that are been less benefited from the CDM, such as sub-Saharan Africa, have called for measures to promote a more equitable distribution of projects. However, it is not surprising that India and China lead in the number of projects. Given the high transaction costs associated with the CDM, the project size (because the formula is, *more tons abated equals more credits*), and economies of scale in many similar projects, the investors are seemingly more interested in those countries. It is because the ability to attract CDM investment depends on the existing emission reduction potential, even among the developing countries. Project developers generally look out for host countries offering the lowest cost-mitigation opportunities because the underlying logic is based on efficiency and not based on equity or fairness. It is said that efficiency and effectiveness of the CDM do not actually permit it to have an equitable distribution of projects.

Although there are many similarities, the CDM and JI are not the same. JI is between two Annex I countries whereas CDM involves one annex I country and another developing country. The CDM has two aims: firstly, to serve annex I countries in achieving their targets and secondly to promote sustainable development in the developing countries who cannot afford to have ESTs otherwise. Since JI projects are implemented in Annex I countries, the credits earned from a given project are deducted from the host country's Kyoto allowance, known as Assigned Amount Units (hereinafter referred to as AAUs). So, JI don't bring any additional emission allowances into the system. At the same time, in CDM, the emission reductions achieved by annex I countries are in addition to their cap. This is since CDMs are based in developing countries with no emission targets under Kyoto Protocol (Streck, 2005).

3. International Emission Trading: The International Emission Trading is another flexible mechanism as recognized by Article 17 of the Kyoto Protocol⁶⁵. This movement was in fact the result of the realization that at least for many countries, it would be politically difficult to obtain the significant domestic emission cut. So, instead, they regarded emission trading as critical in meeting the emission targets under the Protocol. An emission trading is a purely market-based approach for achieving the reductions in the anthropogenic emissions. The limit or cap for each country prescribes the amount of pollutant that may be emitted by them. If that country does not reach this cap, or if there is surplus because of the JI or CDM, that credit is sold as *Emissions Permits*. These permits indicate the right to emit a 'specific volume' of the 'specified pollutant'.

7. COMPLIANCE UNDER THE PROTOCOL

Article 18 of the Protocol requires the COP to "approve appropriate and effective procedures and mechanisms to determine and to address cases of non-compliance with the Provisions of the Protocol." Regarding 'consequences' for non-compliance, there were many objections from the

developed countries. They did not want an inclusion of consequences in the Protocol. However, the article was finalized as “any procedures or mechanisms...entailing binding consequences shall be adopted by means of an amendment.”(Werksman, 2005). Similar to the market-based flexibility mechanisms, this is also unique in the field of international environmental law.

‘The Buenos Aires Programme of Work on Adaptation and Response Measures’, which was adopted at COP-4, 1998, created a ‘Joint Working Group on Compliance’.⁶⁶ Thereafter at COP-6, 2001, a consensus was reached regarding the details of the compliance mechanism.⁶⁷ At the 2001 COP-7, it was decided that the mechanism would include a ‘Compliance Committee’.⁶⁸ The Compliance Committee (hereinafter referred to as CC) consists of 20 members, who in their individual capacities has recognized competence “relating to climate change in relevant fields such as the scientific, technical, socio-economic or legal fields”⁶⁹ Membership in CC is from five regional groups of the UN⁷⁰. (One from small island developing countries, two from the annex I parties, and two from the non-annex I parties.) Though *prima facie* it appears to be fair, some of the members act as mere puppets in the hands of the developed countries.

This Protocol sets out the targets and timetables of emission reduction for the States⁷¹. However, the technical details to bring the overall framework into operation did not find a place in the Protocol itself. This task remained with the Conference of Parties.⁷² In this regard it is said that like the UNFCCC, the Protocol is also a framework instrument. Such an argument can be justified due to the fact that further negotiations are possible in the following:

- (a) Prescription of details of the market-based flexibility mechanisms remained as a duty of COP to be explained.⁷³
- (b) Further the basic operational details (such as accounting for emissions; financial assistance and transfer of technology for developing countries; and the compliance mechanism) were also under the purview of COP to be clarified.

8. PARIS CLIMATE AGREEMENT

The international community adopted the Paris Agreement in 2015⁷⁴ which sets a more comprehensive action plan. It includes a set of common primary responsibilities for all parties such as legally binding commitments in relation to Intended Nationally Determined Contributions (Hereinafter referred to as INDC) as well as a plan for the progression over time. Apart from this it also establishes a common transparency and accountability framework. The Parties also take stock of their collective progress and plan their INDCs for the future. The following are the key features of the agreement.

- a. Compared to the Kyoto Protocol, the Paris Agreement commands universal or near universal acceptance, and is applicable to all. As of 27 October 2016, countries representing roughly 99 per cent of global emissions had put forward INDCs.⁷⁵

- b. The UNFCCC established the foundation of GCCRR as a framework model treaty and then the Kyoto Protocol was built over it by detailing the obligations and mechanisms to control the GHG emissions of Annex I parties. Similarly, the Paris Agreement is a further step towards building the GCCRR based on the UNFCCC. However, it may be noted that when compared to Kyoto Protocol, Paris Agreement is a treaty as defined in the Vienna Convention on the Law of Treaties, 1969. It is important to note that it was not adopted under Article 17 of UNFCCC.⁷⁶
- c. The Paris Agreement was adopted with the purpose of holding the increase in the global average temperature to 'well below 2°Celsius above pre-industrial levels' and pursue efforts towards 1.5 ° Celsius. The actions are to reflect principle of CBDR and Respective Capabilities in the light of different national circumstances.⁷⁷
- d. The important commitments of Parties include: (a) communication and maintenance of successive INDCs⁷⁸; (b) to engage in adaptation planning processes and implement adaptation actions⁷⁹; (c) and to submit and update periodically adaptation communications⁸⁰.
- e. The goals include: (a) Each Party to submit a nationally determined contribution every five year⁸¹; Successive contributions to represent a progression on the current contribution, and to reflect the Parties' highest possible ambition⁸²; Global stocktake to assess collective progress towards long-term goals, and nationally determined contributions to be informed by the outcomes of the global stocktake.⁸³
- f. The Agreement provides for the Parties to engage in 'cooperative approaches' to achieve their INDCs, involving the use of 'internationally transferred mitigation outcomes'⁸⁴. It also provides for a Sustainable Development Mechanism, a new mechanism to 'promote the mitigation of GHG emissions while fostering sustainable development'⁸⁵.
- g. The Agreement also provides enhanced transparency framework with common modalities, procedures, and guidelines, but with built-in flexibility for those developing countries that need it.
- h. Compliance is through a 'transparent, non-adversarial and non-punitive' mechanism.⁸⁶ The Institutions are same as in UNFCCC, except decision-making by Meeting of the Parties to the Paris Agreement (CMA), which meets as part of COP⁸⁷.
- i. The developed countries are to provide financial resources to assist developing countries with adaptation and mitigation, in continuation of their existing obligations under the UNFCCC.⁸⁸⁸ Article 9

9. CONCLUSION:

An analysis of the developments in the area of climate change from the perspective of North-South divide raises a fundamental question *i.e.* who gained from these negotiations; the South or the North? According to Gunther Handl, “any gain by either side, but at the cost of the other is selfishness (Gunther Handl, 1991). But if the gainer is the environment, the planet earth, the solar system, then it is fairness. But such selfless motivations stem from the desire to see the international law regulate and implement what is right and just, for the sake of the global community, irrespective of the particular outcome for the state/individual in question.” Unlike Handl, majority of the scholars follow one-sided arguments in analyzing fairness in climate change negotiations from a North-South perspective. The outcome of climate change negotiations make it clear that the developing countries were quite successful in having their fairness claims addressed at the procedural stage of the regimes development. However, some others have an altogether different approach to this question. For example, Ntambireweki says, “the lack of environmental activism in developing country governments... speaks volumes about the missed opportunities” and “as long as the South fails to articulate its problems, however, it is a duty, born out of a common humanity, for the North to champion the cause of a better world in a holistic sense.” John Ntambireweki, (1991)

On the other hand, RKL Panjabi claims that the attention given to the concerns of the developing countries might be excessive. It is argued that, “...with some justifiable cynicism that the South’s Agenda in the Pre-UNCED process boiled down to acquiring as much money as possible from the North for environmental projects. It could also be argued that the UNFCCC reflected and catered to the South’s needs more than to the over-all cause of reducing greenhouse gas emissions globally.” (Panjabi, (1993)

Whatever may be the contentions, the truth is that the content and implementation of the GCCRR have been, and will continue to be, heavily influenced by the political will and the determination of the major powers, particularly the USA, which also happens to be the largest contributor of greenhouse gas emissions. Because the bargaining power within multilateral negotiations is far from the balanced, the conflicting trade policies of certain individual countries like the USA will continue to have the potential to completely frustrate the negotiations and the subsequent enforcement of the resulting agreements. To consider an example, the USA and its desire to ensure the existence of an emission trading scheme to make implementation of the Kyoto Protocol more economically palatable, it has been noted that “...if viable rules for trading of emission reductions are not adopted by the international agreement, the US electricity sector will not be able to afford the Kyoto Protocol, and the prospects for its ratification by the Senate will dwindle” (Perlis, (1998). As already discussed above, states have gradually built the GCCRR through the consecutive Conference of Parties. Beginning with UNFCCC, and the Kyoto Protocol and Paris Agreement, states have already established an impressive multilateral regime. However, the multifaceted nature of the political issues and the technical complexity of many of the issues dealt with are quite staggering. These complexities stem from various factors, some of which are examined below.

Another significant issue is the absence of mutual trust and commitment to the issue. It is a fact that the per capita GHG emissions from developed countries are 2.5 times those from developing countries. Conversely, developed countries assert the total GHG emissions from some of the developing countries (such as China and India) have surpassed the developed countries. They also emphasize that the emissions from these developing countries are on a sharp rise. Developed countries asserts that the developing countries are still in an advantageous position due to their mammoth population while calculating per capita emission.

An example is the binding nature of the Annex I parties' targets under the Kyoto Protocol. Even considering the fact that the period was of considerably short duration *i.e.* from 2008 to 2012, the failure to comply with this requirement cannot be justified. The procedural lapse to maintain adequate accounting standards for the GHG emissions and removals is also becoming an issue of fairness and equity. The combination of the very modest environmental impact and the fact that some Annex I parties are not on track to meet their targets may appear to give credence to the critics' arguments. Though the GCCRR has universal participation, in reality a small group of some 15 large emitters are responsible for more than seventy five percent of the global emissions. Unless and until there is willingness among these emitters, nothing could succeed.

Endnotes

- ¹ The Impact of Climate Change has been described as quite broad ranging, covering sea level rise, changes in weather patterns and the various adverse effects on living conditions such as desertification and disease migration. The causes and effects of the greenhouse effect are multiple and complex and hence a detailed analysis is beyond the scope of this thesis. For an overview of the problems of climate change, see, (Horsch et.al. 1998)
- ² In fact this has been acknowledged by the Executive Secretary of the UNFCCC Fourth Conference of Parties. See Statement by the Executive Secretary, (1998): "Report of the Conference of the Parties," Fourth Session of COP (Buenos Aires). U.N. Doc. FCCC/CP/1998/16 (1998).
- ³ The United Nations Framework Convention on Climate Change, adopted on May 9, 1992, [1771 UNTS 164, 31 ILM 851]. Hereinafter referred to as UNFCCC.
- ⁴ The UNFCCC, Article 9.
- ⁵ The UNFCCC, Article 2.
- ⁶ The Global Climate Change Regulatory Regime includes the United Nations Framework Convention on Climate Change, 1992; the Kyoto Protocol, 1997 and other relevant and related documentation that lays down the normative standards in this area.

- ⁷ In fact, it has been suggested, "It is virtually impossible to analyse any international law today without considering the North-South confrontation and examining how the particular treaty fits into that context. The relationship between the developed and the developing nations has become the most important global issue since end of cold war." Says, Panjabi. See *Supran.* 4 at p. 515. See also, Marc Williams, (1993): "Rearticulating the Third World Coalition: The Role of Environmental Agenda," *Third World Quarterly*, 14:7, at p. 25. It says that "the North-South issues are inscribed in the international environmental agenda at two structural levels. In the equality of responsibility for environmental degradation and in the relative abilities to cope with these problems...the central issue concerns the way in which North-South issues are raised, the prominence given to them and their impact on the bargaining process."
- ⁸ International law being subjected to a fairness test might be selfishly motivated to the extent that it helps to maintain a level of international and national peace and security and may result in an improved standard of living for particular states/individuals. Selfless motivations stem from a desire to see the international law regulate and implement what is right and just, for the sake of global community, irrespective of the particular outcome for the state/individual in question. On the issue of environmental concern as an issue of international security, see, Gunther Handl, (1991): "Environmental Security and Global Change: The Challenge to International Law," *Year Book of International Environmental Law* 1: 3.
- ⁹ UNGA Res. 53, UN GAOR, Forty-Third Session, UN Doc. A/RES/43/53/(1988).
- ¹⁰ UNGA Res. 207, UN GAOR, Forty-Fourth Session, UN Doc. A/RES/44/207 (1989), at preamble para. 9.
- ¹¹ See, Protection of Global Climate for Present and Future Generations of Mankind, GA Res. 44/207, UN GAOR, 44th Sess., Supp. No.49, UN Doc. A/res/44/207 (1989) 130.
- ¹² UNGA Res. 207, UN GAOR, Forty-Fourth Sess., UN Doc. A/RES/44/207 (1989), at preamble para. 9.
- ¹³ UNGA Res. 212, UN GAOR, Forty-Fifth Sess., UN Doc. A/RES/45/212 (1990). See also, Ahmed Djoghlaif, (1994): "The Beginnings of an International Climate Law," in Irving L. Minzer & J. Amber Leonard (eds.), *Negotiating Climate Change: The Inside Story of the Rio Convention*, Cambridge: Cambridge University Press.
- ¹⁴ The term 'Common Responsibility' derived its meaning from the notions of 'Common Concerns' or 'Common Heritage of Mankind'. In this sense, the 'Common Responsibility' gives all parties the right as well as obligations in the collective and individual interest in the enforcement of a treaty. This further indicates the existence of an *erga omnes* obligations (obligation towards all) and thus creates greater accountability in the regime building process. For a detailed analysis on this topic; see, Rajamani, L. (2006): *Differential Treatment in International*

Law, Oxford: Oxford University Press; Rajamani, L. (2007): “The Nature, Promise and Limits of Differential Treatment in the Climate Change Regime”, *Yearbook of International Environmental Law*, 16:81.; Joyner, C.C. (2002): “Common But Differentiated Responsibilities”, *American Society of International Law Proceedings*, 96:358.

¹⁵ “Contraction & Convergence (C&C), Climate Truth & Reconciliation” at <http://www.gci.org.uk>

¹⁶ The UNFCCC Article 1.

¹⁷ Preamble, para 24. Paragraphs 25 and 26 also speak about the special vulnerability of countries ‘whose economies are particularly dependent on fossil fuel production,’ like the Organisation of Petroleum Exporting Countries (OPEC) states.

¹⁸ Vienna Convention on the Law of Treaties, 1969. Article 31 states, “(1) A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose. (2) The context for the purposes of the interpretation of a treaty shall comprise, in addition to the text, including its preamble and annexes....’

¹⁹ In reality states vary with respect to their economic power, military might and the strength of their institutions.

²⁰ But such exceptions existed earlier also. For example, the General Agreements of Tariffs and Trade, 1947 which recognised the disadvantaged position of less developed countries, stating in Article XXXVI, sub-para.8 that “the developed contracting parties do not expect reciprocity for commitments made by them in trade negotiations to reduce or remove tariffs and other barriers to the trade of less-developed contracting parties.”

²¹ The Stockholm Declaration stressed on the need to consider, “the applicability of standards which are valid for the most advanced countries, but which may be inappropriate and unwarranted social cost for the developing countries.” See, the Report of the United Nations Conference on the Human Environment, UN Conference on the Human Environment, 26th Session Princ. 23, UN Doc. A/CONF.48/14 (1972); 11cILM 1416, 142. Similarly, Rio Conference, 1992 was conspicuous for its endorsement of the differentiated responsibilities between the developed and the developing countries.

²² For a detailed analysis of these Principles see Madeleine Heyward (2011): “Equity and International Climate Change Negotiations: A Matter of Perspective” 7(6) *Climate Policy* 518-534..²⁴ Article 3 (1) which reads thus: “The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.

Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.”

- ²³ Article 3 (2) reads thus: “The specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration.”
- ²⁴ Article 3 (5) reads thus: “The Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change. Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.”
- ²⁶ Article 3 (4) reads thus: “The Parties have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change.”
- ¹⁷ Article 3 (3) says that “The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties.”
- ²⁸ The UNFCCC, 1992. Article 3 says that ‘(1) The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse impacts thereof.’ Clause 2 further says that “The specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse impacts of climate change, and those parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration.”

- ²⁹ See Rio Declaration, 1992. Article 6 states that “the special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given priority. Similarly, Principle 7 says that the States shall cooperate in the spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem. In the view of different contributions to global environmental degradation, states have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of pressures their societies place on the global environment and the technologies and financial resources they command.”
- ³⁰ See IPCC Working Group III (2007): *Mitigation of Climate Change*, Available at: http://www.ipcc.ch/publications_and_data/ar4/wg3/en/ch1s1-2.html (accessed on 22/06/2015).
- ³¹ Article 4(1).
- ³² Article 4 (2)(b).
- ³³ For example, the collapse of USSR led to the closure of many industries which eventually resulted in reduction in emission.
- ³⁴ Article 12.
- ³⁵ Article 12 (2).
- ³⁶ Article 12 (5).
- ³⁷ The UNFCCC, 1992. Article 4(5) provides that the “...developed country parties...shall take all practicable steps to promote and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this process, the developed country parties shall support the development and enhancement of endogenous capacities and technologies of developing country parties.”
- ³⁸ See for example Principle 20 of the Stockholm Declaration, 1972; Principle 9 of the Rio Declaration, 1992, and chapter 34 of the Agenda 21).
- ³⁹ *USA v. India* (On Certain Measures Relating to Solar Cells and Solar Modules, filed on 11 February 2013) WT/DS456/1, G/L/1023, G/TRIMS/D/35, G/SCM/D96/1.
- ⁴⁰ India aims at developing 20,000 megawatts of solar power capacity by 2022.

- ⁴¹ Under Article III: 4 of the GATT 1994. The USA alleges that India's acts appear to provide less favourable treatment to imported solar cells and solar modules than that accorded to like products originating in India.
- ⁴² Under Article 2.1 of the TRIMs Agreement. The allegation is that because the measures appear to be trade-related investment measures inconsistent with Article III of the GATT 1994.
- ⁴³ Under Articles 3.1(b) and 3.2 of the SCM Agreement because the measures appear to provide a subsidy contingent upon the use of domestic over imported goods; and Articles 5(c), 6.3(a), and 6.3(c) of the SCM Agreement because the measures appear to cause serious prejudice to the interests of the United States through displacement or impedance of imports of U.S. solar cells and solar modules into India and through lost sales of U.S. solar cells and solar modules in India.
- ⁴⁴ The World Trade Organisation, "DS456: India — Certain Measures Relating to Solar Cells and Solar Modules". (Accessed on 15/10/2016).
- ⁴⁵ Article 7 (2)(m).
- ⁴⁶ Article 7 (2) (k).
- ⁴⁷ See, also the text of UNFCCC; available at http://unfccc.int/essential_background/convention/background/items/1349.php.
- ⁴⁸ The SBSTA also carries out methodological work in specific areas, such as the LULUCF sector, HFCs and PFCs, and adaptation and vulnerability. In addition, the SBSTA plays an important role as the link between the scientific information provided by expertsources such as the IPCC on the one hand, and the policy-oriented needs of the COP on the other. It works closely with the IPCC, sometimes requesting specific information or reports from it, and also collaborates with other relevant international organizations that share the common objective of sustainable development.
- ⁴⁹ See, the text of UNFCCC at http://unfccc.int/essential_background/convention/background/items/1349.php (accessed 11/12/2009).
- ⁵⁰ Kyoto Protocol to the United Nations Framework Convention on Climate Change, December 11, 1997, 2303 UNTS 148, 37 ILM 22, text available at <http://unfccc.int/kyotoprotocol/items/2830.php> (accessed on 11/12/2009).
- ⁵¹ Canada withdrew from the Protocol in 2012.

- ⁵² The commitments under the Kyoto Protocol vary from nation to nation. The overall 5 per cent target for developed countries is to be met through cuts from 1990 levels. For EU it is 8 per cent (The EU has made its own internal agreement to meet its 8 per cent target by distributing different rates to its member states. These targets range from a 28 per cent reduction by Luxembourg and 21 per cent cuts by Denmark and Germany to a 25 per cent increase by Greece and a 27 per cent increase by Portugal.), Canada-6 per cent USA -7 per cent (although the US has since withdrawn its support for the Protocol); and 6 per cent for Hungary, Japan, and Poland. New Zealand, Russia, and Ukraine are to stabilize their emissions, while Norway may increase emissions by up to 1 per cent, Australia by up to 8 per cent (subsequently withdrew its support for the Protocol), and Iceland by 10 per cent . For details see UNFCCC Website “A Summary of the Kyoto Protocol” http://unfccc.int/kyoto_protocol/background/items/2879.php (Accessed on 12/11/2015).
- ⁵³ For details see the UN Depository on Status of Doha Amendment to the Kyoto Protocol at https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-c&chapter=27&clang=_en (Accessed on 12/11/2015).
- ⁵⁴ First Review of Information Communicated by Each Party Included in Annex I to the Convention, UN Doc. A/AC.237/81 (1994).
- ⁵⁵ The UNFCCC, Article 2(1)(a).
- ⁵⁶ UNFCCC, Article 4 (2)(a) says that “Each of these Parties shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs. These policies and measures will demonstrate that developed countries are taking the lead in modifying longer-term trends in anthropogenic emissions consistent with the objective of the Convention, recognizing that the return by the end of the present decade to earlier levels of anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol would contribute to such modification, and taking into account the differences in these Parties’ starting points and approaches, economic structures and resource bases, the need to maintain strong and sustainable economic growth, available technologies and other individual circumstances, as well as the need for equitable and appropriate contributions by each of these Parties to the global effort regarding that objective. These Parties may implement such policies and measures jointly with other Parties and may assist other Parties in contributing to the achievement of the objective of the Convention and, in particular, that of this subparagraph”
- ⁵⁷ Article 4 (2)(d) thus says: “The Conference of the Parties shall, at its first session, review the adequacy of subparagraphs (a) and (b) above. Such review shall be carried out in the light of the best available scientific information and assessment on climate change and its impacts, as

well as relevant technical, social and economic information. Based on this review, the Conference of the Parties shall take appropriate action, which may include the adoption of amendments to the commitments in subparagraphs (a) and (b) above. The Conference of the Parties, at its first session, shall also take decisions regarding criteria for joint implementation as indicated in subparagraph (a) above. A second review of subparagraphs (a) and (b) shall take place not later than 31 December 1998, and thereafter at regular intervals determined by the Conference of the Parties, until the objective of the Convention is met.

- ⁵⁸ The Kyoto Protocol, 1997; Article 6 (1) reads thus: “For the purpose of meeting its commitments under Article 3, any Party included in Annex I may transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks of greenhouse gases in any sector of the economy, provided that: (a) any such project has the approval of the Parties involved; (b) any such project provides a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to any that would otherwise occur; (c) it does not acquire any emission reduction units if it is not in compliance with its obligations under Articles 5 and 7; and (d) the acquisition of emission reduction units shall be supplemental to domestic actions for the purposes of meeting commitments under Article 3.”
- ⁵⁹ Article 12 which says thus: “(1) A clean development mechanism is hereby defined. (2). The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3. (3) Under the clean development mechanism: (a) Parties not included in Annex I will benefit from project activities resulting in certified emission reductions; and (b) Parties included in Annex I may use the certified emission reductions accruing from such project activities to contribute to compliance with part of their quantified emission limitation and reduction commitments under Article 3, as determined by the Conference of the Parties serving as the meeting of the Parties to this Protocol. (4) The clean development mechanism shall be subject to the authority and guidance of the Conference of the Parties serving as the meeting of the Parties to this Protocol and be supervised by an executive board of the clean development mechanism. (5) Emission reductions resulting from each project activity shall be certified by operational entities to be designated by the Conference of the Parties serving as the meeting of the Parties to this Protocol, on the basis of: (a) Voluntary participation approved by each Party involved; (b) Real, measurable, and long-term benefits related to the mitigation of climate change; and (c) Reductions in emissions that are additional to any that would occur in the absence of the certified project activity. (6) The clean development mechanism shall assist in arranging funding of certified project activities as necessary. (7) The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session, elaborate modalities and procedures with the objective of ensuring transparency, efficiency and accountability through independent auditing

and verification of project activities. (8) The Conference of the Parties serving as the meeting of the Parties to this Protocol shall ensure that a share of the proceeds from certified project activities is used to cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation. (9) Participation under the clean development mechanism, including in activities mentioned in paragraph 3(a) above and in the acquisition of certified emission reductions, may involve private and/or public entities, and is to be subject to whatever guidance may be provided by the executive board of the clean development mechanism. (10) Certified emission reductions obtained during the period from the year 2000 up to the beginning of the first commitment period can be used to assist in achieving compliance in the first commitment period.”

- ⁶⁰ For a summary of the CDM project cycle; see, Farhana Yamin, (2005): “The International Rules of the Kyoto Mechanisms,” in Farhana Yamin. (eds.) *Climate Change and Carbon Markets: A Handbook of Emission Reduction Mechanisms*, United Kingdom: Earthscan; See also, Maria Netto and Kai-Uwe Barani Schmidt, CDM Project Cycle and the Role of the UNFCCC,” in David Freestone and Charlotte Streck (eds.) *Legal Aspects of Implementing the Kyoto Protocol: Making Kyoto Work*, USA: Oxford University Press, at p.175.
- ⁶¹ For an expression of such views, see, International Emissions Trading Association, (2006): “State of The CDM,” IETA *Position on The CDM for CoP-12/MoP-2*.
- ⁶² Kyoto Protocol, 1997, Article 17 says thus: “The Conference of the Parties shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading. The Parties included in Annex B may participate in emissions trading for the purposes of fulfilling their commitments under Article 3. Any such trading shall be supplemental to the domestic actions for the purpose of meeting quantified emission limitation and reduction commitments under that Article.”
- ⁶³ Report of the Conference of Parties, (1999): Decision 8/CP.4, in Report of the Conference of the Parties on its Fourth Session, Addendum, Part II: Action Taken by the Conference of the Parties, Annex 2, FCCC/CP/1998/16/Add.1.
- ⁶⁴ Report of the Conference of Parties (2006): Decision 27/CMP.1, in Report of the Conference of the Parties Serving as the Meeting of the Parties, Addendum, Part II: Action Taken by the Conference of the Parties Serving as the Meeting of the Parties, FCCC/KP/CMP/2005/8/Add.3.
- ⁶⁵ Report of the Conference of Parties, (2002): Decision 24/CP.7, in Report of the Conference of the Parties, Addendum, Part II: Action Taken by the Conference of the Parties, vol. III, Annex, FCCC/CP/2001/13/Add.3.

- ⁶⁶ Report of the Conference of Parties, (2002): Decision 24/CP.7, in Report of the Conference of the Parties, Addendum, Part II: Action Taken by the Conference of the Parties, vol. III, Annex, FCCC/CP/2001/13/Add.3.
- ⁶⁷ They are African Group, Latin American and Caribbean, Asian Group, Eastern European, and Western Europe and Others.
- ⁶⁸ Some critics had predicted its failure even when it was entered in to force in the year 2005. See, David Victor, (2001): *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming*, USA: Princeton University Press.
- ⁶⁹ Report of the Conference of Parties, 1998): Decision 1/CP.3, in Report of the Conference of the Parties on its Third Session, Addendum, Part II: Action Taken by the Conference of the Parties, FCCC/CP/1997/7/Add.1 (1998).
- ⁷⁰ This includes JI, CDM and International Emission Trading.
- ⁷¹ It was adopted on 12 December 2015. For the full text of the agreement can be accessed from <http://unfccc.int/resource/docs/2015/cop21/eng/109r01.pdf>
- ⁷² Article 17- PROTOCOLS: “ (1). The Conference of the Parties may, at any ordinary session, adopt protocols to the Convention; (2). The text of any proposed protocol shall be communicated to the Parties by the secretariat at least six months before such a session; (3). The requirements for the entry into force of any protocol shall be established by that instrument; (4). Only Parties to the Convention may be Parties to a protocol; (5). Decisions under any protocol shall be taken only by the Parties to the protocol concerned.”
- ⁷³ Article 2 of the Paris Agreement.
- ⁷⁴ Article 4.2.
- ⁷⁵ Article 7.9.
- ⁷⁶ Article 7.10.
- ⁷⁷ Article 4.9.
- ⁷⁸ Article 4.3.
- ⁷⁹ Article 14.
- ⁸⁰ Article 6.2.

⁸¹ Article 6.4.

⁸² Article 15.

⁸³ Article 16.

⁸⁴ Article 9.

⁸⁵ US Energy Information Administration (2013) “International Energy Outlook 2013” at pp 159-65. Available at [http://www.eia.gov/forecasts/archive/ieo13/pdf/0484\(2013\).pdf](http://www.eia.gov/forecasts/archive/ieo13/pdf/0484(2013).pdf) (Accessed on 15/04/2015).

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Post-TRIPS Contribution of Domestic Firms to Pharmaceutical Innovation in India: An Assessment

Dinesh Abrol* and Nidhi Singh*

Abstract

The paper analyses the post-TRIPS scenario in India following the implementation of processes of learning, competence building and innovation by domestic firms under the influence of the strategy of global integration of pharmaceutical industry and healthcare and its impact on national pharmaceutical innovation system. Analysis is made of the true nature of the claims regarding the gains that could accrue from the adoption of enhanced reliance on FDI, technology transfer and R&D investment from overseas, and how far it has allowed the Indian pharmaceutical industry and government to upgrade the pharmaceutical innovation system in a better way in the post-TRIPS era. Investigations focus on the achievements and limitations of the post-TRIPS innovation policy. Results indicate that the link between domestic firms and public sector research organisations is the weakest link of domestic pharmaceutical innovation system in India. It suggests that the government needs to rethink the strategy to get domestic firms to contribute to the system building activities at home. The emerging pharmaceutical innovation activity landscape needs a disruptive change and creative destruction of existing relationships to foster indigenous innovation. Investment into the building of relationships and cooperation for the upgrading of processes of learning and competence building should be collectively prioritised by the government, industry, clinicians and public research system to achieve better results with the upgrading of pharmaceutical innovation system.

Key Words: Post-TRIPS, Pharmaceutical innovation, FDI, Technology transfer, R&D, India

1. INTRODUCTION

The implementation of the TRIPS (Trade Related Intellectual Property Rights) Agreement has had multifaceted implications on various sectors of development in the developing countries. The post-TRIPS developments have further aggravated the scenario. While the advocates of the TRIPS regime claim a certain level of development and innovation in the pharmaceutical sector, the reality has not totally been very fruitful. The paper examines the contribution of domestic

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pharmaceutical firms to the emerging pattern of pharmaceutical innovation after the implementation of TRIPS Agreement in India. The study focuses on the impact of the approach adopted by governments for the formulation of post-TRIPS innovation policy to address complementarities vis-à-vis the steering and coordination of policies for upgrading in-house R&D, publicly funded R&D, intellectual property, domestic industry and health system. Analysis further examines the contribution of in-house R&D activities of domestic pharmaceutical firms, foreign technology transfer through alliance making, and collaboration and overseas R&D (ORD) undertaken in India.

In the post-TRIPS era, the most significant hurdle faced by domestic pharmaceutical industries of developing countries is “catching up”. Catching-up refers to the efforts of domestic pharmaceutical industry to catch up in the creation of knowledge for drug discovery and process innovations (Leiet *al* 2016). The “catching-up” country will have to devise government policies that can help establish relationships between industry-research institute-university-hospital as well as strengthen fundamental research in public sector for the benefit of drug discovery and development at home. Further, the catching-up countries in the post-TRIPS era face the challenge of preventing the system of knowledge creation for pharmaceutical manufacturing and innovation from becoming dependent on foreign firms originating from the US and Europe for maintenance of their learning and competence building structures. Therefore, it is important to retain strategic control over the structures of knowledge creation for pharmaceutical innovation at home by encouraging domestic firms to build a path wherein selective delinking of emerging relationships between industry-research institute-university-hospital will be assured through development of R&D and innovation for priority diseases of catching-up countries by their respective governments.

Results indicate that the link between domestic firms and public sector research organisations is the weakest in respect of domestic pharmaceutical innovation system in India. In the post-TRIPS era, the Indian pharmaceutical firms were put on the pathway of global integration of the processes of learning and competence building. They continue to pursue their innovation strategies in line with their own thinking that their limited in-house R&D efforts when combined with contribution from strategic alliances and collaborations with foreign firms will ultimately enable them to catch-up with firms originating from the US and Europe.

Analysis suggests that the contribution of domestic firms to product, process and manufacturing innovation is embedded in the concept of learning, competence building and innovation making, which is “heroic” in terms of knowledge creation for new drug development and is “dependent” on foreign firms for competence building in terms of capacity creation for drug discovery, development, manufacturing and regulation. Consequently, at home, their current innovation strategies do not place sufficient emphasis on building industry-research institute-university-hospital relationships and on cooperation for learning and competence building within India. The contribution of domestic firms to pharmaceutical innovation activity landscape requires indigenous innovation to be prioritised by the government, industry, clinicians and public research system. The authors suggest that the government needs to reconstruct its policy of innovation

making related incentives and disincentives and accordingly devise industrial and health policies to encourage domestic firms to contribute to swift organisational innovation system.

2. TRIPS, DOMESTIC POLICYMAKING AND PHARMACEUTICAL INNOVATION

An argument put forth by the advocates of neoliberal economic reforms for the early implementation of the TRIPS provisions in the national legislations was that India needs high quality Foreign Direct Investment (FDI), Foreign Technology Transfer (FTT) and overseas R&D so that domestic firms could be motivated for new drug development through a stronger patent system. Advocates of TRIPS Agreement argued that the patent policy should be consciously designed so as not to discourage foreign firms from investing and also entering into strategic alliances and collaborations with domestic firms in the post-TRIPS era. In the pro-neoliberal economic reforms policymaking circle, the view taken was that domestic firms should be encouraged to pursue the path of strategic alliances and collaboration agreements to inset themselves into global value chains. In many ways, this view was expressed in the writings of Watal (2016) and Ganesan (2016). Such views found their way ultimately into the official policy framework largely when the NDA government led by Atal Bihari Vajapayee took over and announced the National Pharmaceutical Policy, 2002, which the UPA government continued with and strengthened in the same direction of the neoliberal path of global integration of domestic pharmaceutical production and innovation activities.

The vision and direction changed from the year 2000 for all complementary policy measures under implementation for pursuing pharmaceutical innovation and industrial development in India. Since then the political and bureaucratic apparatus has been upbeat about the contribution of the strategic alliances and collaborations being pursued by domestic firms with foreign pharmaceutical firms to advance the activities of pharmaceutical innovation in India. Domestic firms have been encouraged to pursue the strategy of pursuing learning, competence building and innovation making, largely through strategic alliances and collaborations. The Government of India devised a policy in support of separate R&D companies and gave liberal tax concessions. When the National Pharmaceutical Policy, 2002, was formulated, India was in the process of implementing the second amendment to the Indian Patent Act, 1970.

It was also a time when several important academic contributions explicitly favoured the argument of stronger intellectual property rights (IPR) regime in their writings. Lall and Albaladejo (2002) assessed the case of uniform and strong IPRs for developing countries as a whole by classifying them using various measures of domestic innovation and technology imports. It was assessed that it is possible to argue that India has reached a stage in pharmaceutical production where stronger IPRs will induce greater innovation by local firms, though the benefits will have to be set off against the closure of other firms. Keely (2000) too came to a similar conclusion that as long as the TRIPS Agreement is in place most developing countries will almost always continue to suffer a decrease in social welfare. The result gets qualified only in the case where the developing countries as a whole have a large share in the markets that are innovation intensive. Conclusions

rested on the understanding that India's industrial strength in respect of production of generics from the basic stage and the ability to harness its scientific and technological potential for development of new drugs were robust enough to take advantage of the spillover, demonstration and competition effects of FDI and related technology transfer and overseas R&D activities.

Granville and Leonard (2003) made a case for upgrading the national innovation system through trade and investment liberalization¹. Their argument was built around the model of knowledge diffusion occurring automatically via strong IPRs when combined with the process of liberalisation and the entry of international pharmaceutical firms. Argument favoured a strong IPR compatible FDI policy approach to pharmaceutical industry. This policy model was built on the basis that it is possible to achieve synergy between the emerging trends in automatic knowledge diffusion of pharmaceutical production, process development and marketing strategies and the existing essential conditions of a strong education foundation and past practice of spending in health sector. This model did not focus on the need to strike a balance between exploring fundamental science and applying existing knowledge. It did not ask the government to create favourable conditions for investment to be directed towards fundamental research, industry-research institutes-university-hospital relationships and cooperation.

Contradictory voices were raised from within the Indian academia, the civil society, and the local pharmaceutical industry. These voices argued in favour of the position that not only does India need to fully exploit the transition period making use of exemptions obtained through negotiations, but also the policy of "selective delinking," strengthening of public sector and its positive discrimination in favour of private sector companies practicing indigenous innovation and new product development for the benefit of Indian priority diseases should be followed². Although the challenge of TRIPS was tackled by policymakers in part in India through the strategy of delayed external liberalisation (by holding back the freedom to establish subsidiaries to foreign pharmaceutical firms and postponing the implementation of product patent until 2005), the domestic innovation policy was shaped on a significantly different understanding that stronger IPRs and strategic alliances with foreign firms are necessary to promote product innovation in pharmaceutical industry.

Many scholars voiced their concern about the early implementation of TRIPS provisions, saying that they did not agree with the rosy picture being painted in respect of FDI inflows for upgrading pharmaceutical manufacturing or for transferring new technologies from R&D stage to their successful introduction into practice. They were in favour of strengthening domestic demand and gearing the public sector component of the national innovation system so as to undertake innovation making activities in priority diseases which cover both communicable and non-communicable diseases as well as address the challenge of indigenous industrial development through process manufacturing innovation (Abrol, 2004; Chaudhuri, 2005). In the next section we undertake an assessment of the effects of pharmaceutical innovation system resulting from the adoption of this pathway of catching-up on the pharmaceutical industry in India.

3. PATENTS, DOMESTIC FIRMS AND INNOVATION

An assessment of the results of the catching-up process in the post-2000 phase of pharmaceutical innovation indicates that while the full legal effects of the Agreement were suspended during the transition period; its effects on India were nonetheless substantial, because of its impact on the behaviour and thinking of the industry and the government. With a looming deadline for TRIPS implementation and the fear of losing ground in the local market, Indian firms began to look for new markets. This led them in two directions towards exports and towards research and development (R&D) targeted at developed country markets. India was able to achieve a positive trade balance in pharmaceuticals in the late 1980s. Domestic firms were then increasing their focus on exports to unregulated markets in developing countries. Although the developed world has the most lucrative markets for generic drugs, extensive regulation restricts entry.

Domestic firms had to develop the necessary organisational and technological capabilities through acquisition of foreign firms as well as strategic alliances and collaborations for learning, competence building and innovation using the opportunities available in the global pharmaceutical industry. Although the domestic firms took some time to develop in-house competence for the export of off-patent generics to regulated markets, they have mainly continued to steadily invest in the inventive activity required to be carried out for the success of this path. It is because domestic firms, until then, had chosen to rely on the capabilities of public sector industry and R&D institutions a discontinuity which some characterise as a sign of rising star is nothing more than a sign of locking-in of domestic firms into a dependent pathway of industrial development.

Analysis of the industry-wide patenting activity indicates that innovation activities continue to focus on the development of capabilities, innovations and technological know-how for off-patent generics that the industry is interested in exporting to regulated markets of Europe and the US. The number of patents filed on New Chemical Entities (NCEs) is still small. Analysis of the different types (in terms of numbers) of patents in Table 1 suggests that the economic opportunity created by the Hatch-Waxman Act of 1984 remained an important stimulus for domestic pharmaceutical firms to invest in the processes of learning, competence building, and innovation during the post-2000 period. See Table 1 for the historical timeline of capability development profile mapped by the authors on the basis of patents filed by the Indian pharmaceutical industry with the United States Patent and Trade Mark Office (USPTO).

Table 1: Pharmaceutical Patenting in United States from the Indian Pharmaceutical Industry, 1992–2013

| Sl. no | Nature of patent | 1992–1995 | 1996–1999 | 2000–2003 | 2004–2007 | 2008–2013 | Total |
|--------------------|--|-----------|-----------|------------|------------|------------|-------------|
| 1 | Process patent | | 11 | 51 | 133 | 176 | 371 |
| 2 | NDDS patent | | | 18 | 23 | 10 | 51 |
| 3 | NCE patent | | 3 | 6 | 10 | - | 19 |
| 4 | Method of treatment, Dosage, Formulation Composition, Combination & Product Patent | 14 | 26 | 102 | 261 | 202 | 403 |
| 5 | New forms of substances | | 6 | 63 | 156 | 250 | 475 |
| Grand total | | 14 | 46 | 240 | 583 | 638 | 1521 |

Source: Patents granted to top 20 domestic pharmaceutical companies by USPTO.

Chemistry driven research process leading to non-infringing processes for active pharmaceutical ingredients (APIs), identification and characterisation of impurity profiling pertaining to APIs, reduction of impurity levels, acceptable dosage forms and formulations have come to be pursued by the domestic firms as their main priority in the sphere of pharmaceutical innovation during the post-TRIPS period. Bedi and Bedi (2015), using databases like Ekaswa (TIFAC) and official websites of the European Patent Office and Indian Patent Office, also confirm that majority of the applications of top eleven pharmaceutical companies up to 2010 were related to inventions in the field of new or improved processes for products than for the products themselves. Their analysis also confirms that product related applications are concerned with intermediates and formulations with maximum contribution in modified dosage forms.

While Bedi and Bedi (2015) indicate that there has been a small increase in the number of product patent applications filed by the top eleven pharmaceutical companies, especially after 2005, our own analysis which covers a longer period shows that this type of inventive activity has neither been sustained nor has led to a significant increase in NCE patenting. In fact, Table 1, given above, shows that the NCE activity does not even figure in the trends list after 2010. Further, we would like to highlight that foreign firms dominate the process patent scene as well. There are very few patents granted to domestic firms for NCEs.

See Figures 1 and 2 for information on patents given to both domestic and foreign firms by the Indian Patent Office (IPO). The number of product patents granted to foreign firms by the IPO is much higher than of domestic firms. Further, dosage and formulation and process patents account for close to 99 per cent of patents filed at the IPO.

**Fig 1: Nature of Patent Granted to Domestic and Foreign Firms in IPO
(2005 to March 2013)**

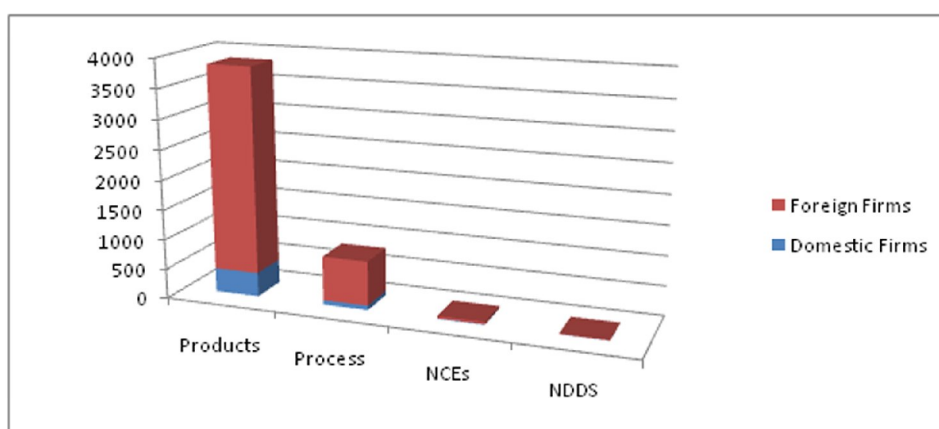
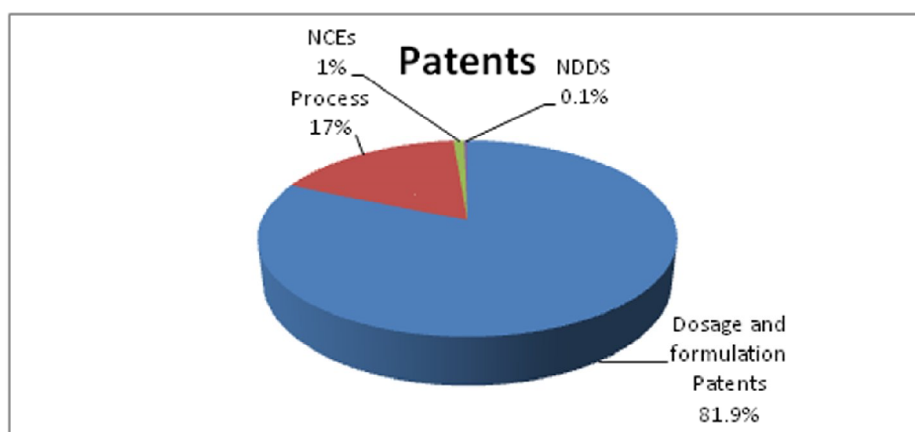


Fig 2: Nature of Patent Granted in IPO (2005 to March 2013)



Analysis of the patterns of innovation being carried out to compete in the domestic market shows that domestic firms rely on combination products, many of which are irrational, if not harmful, to build monopolies. See Table 2 for a comparison of the innovation behaviour of the top 15 domestic pharmaceutical firms as in 2013–14. In Table 3 we also bring out that while both Indian companies and MNCs rely on product differentiation and irrational combinations based product innovation activity to build product monopolies, this kind of innovation strategy is most often employed by domestic pharmaceutical firms.

Table 2: Single Product Monopolies and Combination Product Monopolies of the Top 15 Domestic Firms in the Indian Retail Market, 2013–14

| Domestic Companies | Single product monopolies | Combination product monopolies | Patents filed in IPO |
|--|---------------------------|--------------------------------|----------------------|
| Cipla Ltd. | 14 | 17 | 15 |
| Sun Pharmaceuticals Industries Ltd. | - | 14 | 19 |
| Emcure Pharmaceuticals Ltd | 11 | 8 | 1 |
| Dr. Reddys Laboratories Ltd | 5 | 7 | 21 |
| Lupin Ltd | 7 | 5 | 5 |
| Torrent Pharmaceuticals Ltd. | 4 | 4 | 6 |
| USY Ltd | 3 | 3 | 5 |
| Cadila Pharmaceuticals Ltd | | 2 | - |
| Indoco Remedies Ltd | 3 | 2 | - |
| Natco Pharma Ltd | | 2 | 13 |
| Biocon Ltd | | 1 | 2 |
| Glenmark Pharmaceuticals Ltd. | | 1 | 2 |
| Hetero Healthcare Ltd | | 1 | 1 |
| IPCA Laboratories Pvt Ltd. | | 1 | 10 |
| JB Chemicals | 1 | 1 | 5 |
| Total | 48 | 69 | 105 |

Source: Dataset prepared on the basis of information available on the patents from IPO and

market sales of individual companies and position in the market from AIOCD.

Table 3: Therapeutic Area-wise Single and Combination Product Monopolies by Indian Companies and MNCs, 2013–14

| Therapeutic Groups | Single Monopolies | | Combinations Monopolies | |
|------------------------------|-------------------|------------|-------------------------|-----------|
| | Indian | MNC | Indian | MNC |
| Diabetes | 2 | 13 | 10 | 3 |
| Malaria | 2 | - | 2 | - |
| Infections | 17 | 5 | 28 | 3 |
| Neoplasm (Tumor) | 19 | 14 | - | - |
| Cardiovascular diseases | 27 | 14 | 39 | 8 |
| Neuro/Brain disorders | 19 | 7 | 7 | - |
| Respiratory Diseases | 1 | 7 | 35 | 5 |
| Pain/Analgesics | 23 | 8 | 61 | 1 |
| Blood related disorders | 12 | 5 | 2 | 0 |
| Gastro intestinal infections | 16 | 4 | 48 | 4 |
| Skin diseases | 12 | 8 | 40 | 11 |
| Hormones | 3 | 6 | 1 | 0 |
| Ophthalmic/eye disease | 22 | 4 | 14 | 5 |
| Erectile Disinfections | 1 | - | 2 | 1 |
| Stomatologicals | 1 | - | 1 | - |
| Vitamins/minerals/nutrients | 3 | - | 0 | 2 |
| Gynaecologicals | 5 | 5 | 3 | 1 |
| Vaccines | 5 | 1 | - | 2 |
| Others | 14 | 2 | 2 | 0 |
| Total | 204 | 103 | 295 | 46 |

Source: Dataset prepared on the basis of information available on market sales of individual companies and position in the market from AIOCD, 2015.

New product related inventive activity is certainly not known to play a role in the creation of competitive advantages for domestic pharmaceutical firms in the domestic market or export market. Tables 2 and 3 clearly show that product differentiation and brands still form the basis of market power for domestic companies. In export markets of the US, EU, Australia and Japan, domestic firms have had to use patenting activity, filing of Abbreviated New Drug Applications (ANDAs) and Drug Master Files (DMFs) to break into the regulated markets through exports.

See Tables 4 and 5 for an assessment of the key competency areas of domestic pharmaceutical firms as reflected in the pattern of registration of DMFs and ANDAs prior to

registering products (generics) in the US, EU and other developing countries. In case of the Indian pharmaceutical industry, the New Drug Applications (NDAs) filed with the United States Federal Drug Regulation Authority, i.e. the United States Food and Drug Administration or USFDA, are few and far between (nine in 2012). Further, we would like to note that some of the domestic companies are known to increase their investment in R&D and the filing of patents, ANDAs and DMFs to become valuable for acquisition rather than becoming competitive in the global or domestic market pharmaceutical landscape.

Fresenius Kabi and Matrix are two such examples which come to mind in respect of such behaviour in competence building and innovation making. There are also companies like Ranabaxy whose investment behaviour relating to innovation making to foray into the regulated markets for quick profits has landed them and the Indian pharmaceutical industry into serious trouble. When the promoters of Ranabaxy realised their folly they tried selling their assets to a Japanese MNC (Daichi Sankho) which, however, bought the company without due diligence. Resultantly, the Japanese company had to retrace its steps; Ranabaxy is now a part of Sun Pharmaceutical Industries Ltd.

Table 4: DMFs Obtained by Domestic Pharmaceutical Companies, 2008–2013

| Company name | Type I | Type II | Type III | Type IV | TYPE V |
|-------------------------------|--------|------------|------------|-----------|-----------|
| Aarti Industries Ltd | - | 10 | 13 | 4 | - |
| Alembic Pharmaceuticals | - | 37 | 1 | 15 | - |
| Apotex Pharmachem Inc | - | 45 | 1 | 15 | - |
| Aurobindo Pharma Ltd | - | 45 | 16 | 2 | 1 |
| Biocon | - | 10 | 1 | 2 | - |
| Cadila Healthcare Ltd | - | 45 | 23 | 5 | 1 |
| Dr Reddys Laboratories Ltd | - | 60 | 21 | 9 | 2 |
| Fresenius Kabi | - | 21 | 2 | 1 | 1 |
| Glaxosmithkline Llc | - | 9 | - | - | - |
| Glenmark Generics Ltd | - | 20 | 11 | 1 | 1 |
| Hetero Drugs Ltd | - | 102 | 8 | 5 | - |
| Hikal Ltd | - | 2 | 1 | - | - |
| Ind Swift Laboratories Ltd | - | 8 | 4 | 1 | - |
| Lupin Ltd | - | 56 | 11 | 13 | 2 |
| Matrix Pharma | - | 2 | 1 | - | - |
| Micro Labs Ltd | - | 8 | - | - | - |
| Novartis Pharmaceuticals Corp | - | 3 | 1 | 1 | - |
| Piramal Healthcare Uk Ltd | - | 3 | - | 1 | - |
| Ranbaxy Laboratories Ltd | - | 17 | 7 | 1 | - |
| Torrent Pharmaceuticals Ltd | - | 9 | 6 | 4 | - |
| Wockhardt Bio Ag | - | 6 | 10 | 6 | - |
| Sun Pharma | - | 35 | 14 | 8 | 2 |
| TOTAL | | 553 | 152 | 94 | 10 |

Source: No. of DMF Data from <http://www.betterchem.com> (Drug master file database) and no. of *Abbreviated New Drug Application* (ANDA) from individual company website, data analysed up to 2013–14.

Table 5: ANDAs of Domestic Pharmaceutical Companies, 2008–2013

| Company Name. | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---------------------------|----------|-----------|-----------|-----------|-----------|-----------|
| DR Reddy's labs | 1 | 4 | 6 | 5 | 6 | 5 |
| Ranbaxy | 1 | 3 | 1 | 1 | - | - |
| Glenmark | - | 1 | 3 | 3 | 2 | 5 |
| Aurobindo Pharmaceuticals | 3 | 3 | - | 2 | 8 | - |
| Sun Pharma | 2 | 5 | 2 | 4 | 5 | 5 |
| Alembic ltd | - | - | 1 | - | - | - |
| Lupin | 1 | - | 2 | 2 | 3 | 2 |
| Orchid | - | 2 | 1 | - | 1 | - |
| Torrent | - | 1 | 1 | 2 | 5 | - |
| Wockhardt | - | 1- | - | 1 | 3 | - |
| Cipla | - | 1 | - | - | 1 | - |
| Fresenius Kabi Oncology | - | 1 | 3 | - | - | - |
| Matrics | 1 | - | - | - | - | - |
| Strides | - | - | - | - | 2 | - |
| TOTAL | 9 | 22 | 20 | 20 | 36 | 17 |

Source: ANDAs granted to domestic pharmaceutical companies by USFDA, data analysed up to 2013–14.

Domestic Firms and R&D for New Product Development

While the face of the Indian pharmaceutical industry has gradually changed owing to an R&D based domestic industrial segment which is competent to participate in the processes of learning, competence building and innovation making for the supply of off-patent generics to regulated markets, in the field of product development the bulk of its “innovative outputs” still belong to the areas of dosage/formulation/composition of matter related R&D work. This point needs emphasis because scholars studying industrial dynamics tend to become overly optimistic in their conclusions regarding the progress made by the domestic segment of the Indian pharmaceutical industry.

Our own analysis is that we need to take a long-term view because catching-up involves complex relationships between scientific research and industrial innovation, for which the industry will have to undertake lasting measures. Evidence building undertaken on new product development

from the information made available by companies on their websites indicates that, initially, only ten or twelve Indian pharmaceutical companies had earnestly started working on the development of new drugs. An estimated 60 new compounds came under the radar of domestic firms and these compounds were worked upon up till various phases of development and testing by these ten or twelve domestic firms. But, there has been a decline in the growth of investment in new product development.

The problem of weak in-house capabilities in respect of discovery and development of new drugs in case of domestic pharmaceutical industry continues to be a major handicap for the “national innovation system” in India. Assessment indicates that the current level of activity of compound development and testing by domestic companies is still small compared to world standards. At this early stage of drug discovery, India is still weak. Many Indian companies are now pursuing a strategy that will lower their costs and risk factors. The plan is to find a new drug within an existing family that has been discovered, that is, to find a compound that is analogous to a discovered compound.

Take, for example, the case of Giltazones—one of the compounds of DRL where originally Sankhyo was doing work. This strategy cuts down on the risk. The other strategy is out-licensing where the Indian company takes some leads to pre-clinical stage. In this case, DRL’s strategy was to collaborate with a foreign company to jointly pursue clinical development¹. If all tests are cleared, the company can strike a deal with an MNC that has the right to market the compound in a particular market. The Indian company gets milestone payments for each stage of clinical trial cleared by the compound.

DRL is still one of the most determined domestic companies working on the national scene in the area of drug discovery and development. All big companies, namely Ranbaxy, DRL and Glenmark follow the out-licensing route to develop new drugs. DRL has entered into a deal with Novartis for further work on an anti-diabetic compound DRF 4158. Ranbaxy entered into a deal with Bayer for Cipro NDDS (Novel Drug Delivery System) and RBx 2258 (Benign Prostatic Hyperplasia or BPH). Glenmark has entered into a deal with Forest of North America and Tejin of Japan to experiment with compounds that could provide treatment for asthma. However, the level of success obtained by these companies through routes currently under perusal has not yet yielded the desired results in respect of new product development.

Table 6 provides details on diseases focussed by drugs under development in India and their current status. R&D capabilities for new drug discovery and development within the Indian firms have a global market favouring R&D orientation. Under the emerging conditions of competition in the “global” pharmaceutical industry, domestic firms of developing countries are likely to be lured by multinational corporations to work for western markets. The result is that many Indian companies have realised that drug discovery investment is a different but risky game for which neither their capabilities nor the system of innovation are yet ready. Realising that easy success

will not come like this in the near future, their strategy has changed and their investment in drug discovery is no more on a roller-coaster ride. Abandoning of molecules or resorting to contract work in drug discovery and development and contract research route can be attributed to this realisation; firms are now investing more in contract research route.

Table 6: New Chemical Entities (NCEs) Based Drug Discovery Pipeline

| No. | Companies | NCE Pipeline | Status |
|-----|-------------------------|--|--------------|
| 1. | Lupin Ltd | LLL2011 Anti-migraine, herbal (Amigra) | Phase III |
| | | LL4218 Anti-Psoraisis (Desoside-P) | Phase II |
| | | LL3858 Anti-TB(Sudoterb) | Phase II |
| | | LLL3348 Anti-Psoraisis,Herbal (Desoris) | Phase II |
| | | TypeII Diabetes | Preclinical |
| | | Rheumatoid arthritis | Preclinical |
| 2. | Dr Reddy's Laboratories | DRF 10945 (Dyslipidemia) | Phase I |
| | | DRF 11605 (Diabetes &Dyslipidemia) | Pre-clinical |
| | | DRF 1042 Cancer | Phase II |
| | | DRF 1644 Cancer | Phase I |
| | | DRF 5265 Cancer | Pre-clinical |
| | | RUS 3108 Cardiovascular | Pre-clinical |
| | | DRF 13792 Bacterial infection | Pre-clinical |
| | | DRF 2593(Metabolic Disorder) | Phase II |
| | | DRL 16805(Atherosclerosis) | Pre-clinical |
| | | DRL 15925(Rheumatoid Arthritis) | Pre-clinical |
| | | DRL 12424(Mixed Dislipidemia) | Pre-clinical |
| | | DRL 16536(Diabetes) | Pre-clinical |
| 3. | Wockhardt Ltd | W CK 771(anti- infective) | Phase II |
| | | WCK1152(Respiratorytract infections) | phase I |
| | | W CK 1457 (Activity against vancomycin resistant enterococci) | Pre-clinical |
| | | WCK 2370(Anti-infective) | Pre-clinical |
| | | WCK 2664(Anti-infective) | Pre-clinical |
| | | WCK 1734(Dermatology) | Pre-clinical |
| 4. | Lupin Ltd | LL 4858 (Anti-TB) | Phase I |
| | | LL 4218 (Anti-psoriasis) | Phase I |
| | | LL 3348 (Anti-psoriasis) | Phase I |
| | | Amigra(Anti-Migraine) | Phase-III |

| | | | |
|-----|-------------------------------|--|-----------------|
| 5. | Glenmark Pharmaceuticals | GRC 3886 (Asthma/chronic obstructive pulmonary completed disorder) | Phase I |
| | | GRC 1087 (Obesity/diabetes) | Pre-clinical |
| | | GRC 8200(Diabetes) | Pre-clinical |
| | | PDE -4(CNS) | Pre-clinical |
| 6. | Torrent Pharmaceuticals | Anti-arrhythmic agent | Phase II |
| | | AGE breakers(diabetes; heart diseases) | Pre-clinical |
| 7. | Orchid Pharmaceuticals | BLX 1002 (Diabetes) | Phase I |
| 8. | ZydusCadila | ZYH1 (Dyslipidemia) | Pre-clinical |
| | | ZYH2 (Diabetes) | Pre-clinical |
| | | ZYH3 (Dyslipidemia and diabetes) | Pre-clinical |
| | | ZY1400 (Inflammation and pain) | Pre-clinical |
| | | ZYO1(Obesity) | Pre-clinical |
| | | ZYI1(Inflammation and pain) | Phase-I |
| 9. | Piramal Healthcare | P276(Oncology) | Phase I/II |
| | | Herbal(Anti-Fungal) | Phase II |
| 10. | Alembic Ltd | Pramipexole(Anti Parkinson) | Final |
| | | Ropinirole (Anti Parkinson) | Final |
| | | Telithromycin(Ketolide/Antimicrobial) | Initial |
| | | Aripipazole(Antipsychotic) | Initial |
| 11. | Biocon Ltd | IN-105 Diabetes (oral insulin) | Phase II |
| | | T1h Oncology inflammation | Phase II |
| 12. | Sun Pharmaceutical Industries | SUN 1334H (Anti-allergy) | Phase II |
| 13. | Ranbaxy Laboratories | RBx 7796 (Respiratory tract infections) | Phase II |
| | | RBx 6198 (Urology) | Early discovery |
| | | RBx 9001 (Urology) | Pre-clinical |
| | | RBx 9841 Urology | Pre-clinical |
| | | RBx 8700 (Bacterial infection) | Pre-clinical |
| | | RBx 7644 (Bacterial infection) | Phase I |
| | | OZ222/RBx11160(Malaria) | Phase I |
| | | RBx 11160(Malaria) | Phase II |
| 14. | GSK Pharmaceuticals | Rotarix(Anti Diarrhoea) | Final |
| | | Cervarix(Anti-Cancer) | Final |
| | | Arixta(Anti-coagulant) | Final |

Source: Company annual reports and websites, 2012.

The latest data on the progress shows that close to 120 NCEs are currently progressing in the Indian preclinical and clinical R&D pipeline. This statement is in line with our own analysis which affirms that only a handful of firms continue to increase their R&D investments in new product development. R&D expenditure of the top 15 Indian pharmaceutical firms is nowhere close to the costs being incurred by generic companies of Israel and Europe. Dabur, Nicholas Piramal, Wockhardt and Shanta Biotech have had to divest important parts of their pharmaceutical business to foreign companies. In many cases these divestitures have also involved R&D based segments. While it is true that DRL, Cipla, Glenmark, Lupin, Cadila, Wockhardt, Sun Pharma and Torrent are still around as integrated Indian pharmaceutical companies which have built substantial foreign sales, an analysis of the current status of new drug development indicates that most molecules have not progressed very far and many of them have been completely abandoned by the firms.

While there are certainly a few positive outcomes to report in respect of drug discovery, the number of success stories is undoubtedly small and not yet significant in terms of contribution. In June 2013, ZydusCadila launched Saroglitazar, the first drug discovered and developed by an Indian pharmaceutical company and the first glitazar in the world to be approved for the treatment of diabetic dyslipidemia or hypertriglyceridemia in patients with type 2 diabetes. In April 2012, Ranbaxy launched India's first domestically developed drug, Synriam, a combination of Arterolane Maleate and Piperaquine Phosphate, for the treatment of *Plasmodium Falciparum* malaria. Although arterolane was not discovered in India, but by a collaborative drug discovery project funded by the Medicines for Malaria Venture (MMV), Ranbaxy partnered in 2003 to carry out development work for which it was granted a worldwide license.

Glenmark and the US partner Salix Pharmaceuticals gained approval from the US Food and Drug Administration (FDA) in December 2012 for crofelemer, licensed from Napo Pharmaceuticals, for treatment of non-infectious diarrhoea in patients undergoing antiretroviral therapy for HIV/AIDS. Crofelemer, a purified Oligomeric Proanthocyanidin (Mr up to 9 kDa) isolated from the latex of the South American Sangre de Grado tree (*Croton Lechleri*), has a new mechanism of action- it blocks two structurally unrelated chloride channels in the gut, thereby decreasing the excretion of water and reducing the duration of diarrhea.

Discussions about where hopes lie in respect of new drug development has led some to suggest that India's first innovative drug could come from a new generation of pharmaceutical companies. In recent years, ambitious new startup discovery firms backed by private equity investors such as Pune-based NovaLead and Indus Biotech have come up. They gained success where Indian pharma goliaths wandered into and faltered (*Businessworld* 2014). Not surprisingly, the *Businessworld* article questioned if this was the end or the beginning of the story? Whether the dream can be revived for the Indian domestic pharmaceutical firms is in need of rigorous analysis if the policy design is to be worked out appropriately. See Tables 7, 8, 9 and 10 to determine the current status of NCE based drug discovery and development work. Analysis of the pipeline of pharmaceutical firms and the disease focus of product development work is described in Table 8.

Table 9 provides an analysis of the disease focus of clinical development work being undertaken by domestic pharmaceutical firms. Table 10 brings out the mismatch in terms of disease focus of the R&D activity of these firms with the priorities indicated by the disease burden of the country as such.

Table 7: Status of NCE Based Drug Discovery Pipeline

| Name of the firm | Disease Focus | Current Status |
|-------------------------|--|--|
| DRL | | |
| DRF 2593 | Diabetes (PPAR) | Licensed out to Rheoscience in 2004, now in Phase III trials |
| DRF 1042 | Oncology | Abandoned after partner Clintech couldn't raise funds for phase II |
| DRF 10945 | Metabolic disorder (PPAR agonist) | Phase I completed – showed little progress so was abandoned |
| DRL 17822 | Dyslipidemia ,atherosclerosis and associated cardiovascular diseases | In Phase I Studies |
| RUS 3108 | Cardiovascular | Abandoned in Phase I |
| DRL 11605 | Metabolic disorder (PPAR agonist) | Preclinical, Abandoned in 2007 |
| DRL 16536 | Metabolic disorder (AMPK modulator) | Preclinical, Abandoned in 2007 |
| DRF – 4848 | Anti-inflammatory | Preclinical, Abandoned in 2003 |
| DRF – 3188 | Cancer, viral infection and immune stimulation | Preclinical, Abandoned in 2003 |
| DRF – NPPC | Insulin sensitizer | Preclinical, Abandoned in 2003 |
| DRF – 4158 | Insulin sensitizer for type 2 diabetes | Out-licensing partner Novartis suspended clinical trial in Jan 2003 |
| DRF – 2725 | Insulin sensitizer for type 2 diabetes | Bladder tumors were found in rats treated with the drug. Out-licensing partner Novonordisk suspended trial in 2002 |
| GLENMARK | | |
| GRC 3886 Oglemilast | Chronic obstructive pulmonary disease (COPD), asthma | Trials on COPD proved in conclusive. Tests are on for asthma |
| GRC 2200 | Diabetes type 2 | Molecules return by licensing partner Merck after it decided to get out of diabetes research. Phase II completed |
| GRC 6211 Melogliptis | Osteoarthritic pain , incontinence, neuropathic pain | Out-licencing partner Eli lily suspended clinical trials in early October 2008 after it was found that the drug has side effects |

| | | |
|---------------------------|---|---|
| GRC 4039 | Rheumatoid arthritis, multiple sclerosis | Phase I trials completed |
| GRC 10693 | neuropathic pain, osteoarthritis, and other inflammatory pain | Phase I trials completed |
| GRC 15300 | Pain | In phase I trials |
| GBR 500 | Sclerosis, Inflammatory disorder | In phase I trials |
| GBR 600 | Anti-platelet, adjunct to PCI/acute coronary syndrome | In phase I trials |
| LUPIN | | |
| LL4858 | Anti-TB | Slow development now in phase II trials. No USFDA approval |
| LI3348* | Anti-Psoriasis | Slow development now in phase II trials. No USFDA approval |
| LL4218 | Anti-Psoriasis | Phase II trials. No USFDA approval |
| LL2011* | Anti-migraine | In Phase III trials. No USFDA approval |
| Unnamed | Diabetes | In preclinical development |
| Unnamed | Rheumatoid arthritis | In preclinical development |
| ORCHID | | |
| BLX1002 | Orally active anti-diabetic compound | Phase II trials in Europe over in September in 2003. No progress since. |
| PIRAMAL HEALTHCARE | | |
| P276 | Mantle cell lymphoma. Malignant melanoma, multiple myeloma and head and neck cancer | Received IND status from USFDA for mantle cell lymphoma and currently in Phase II clinical trials in US |
| P1446 | Oncology | Phase I in Canada and India. Does not have IND status from USFDA |
| P1736 | Type II Diabetes | In phase I trials in Netherlands. Does not have IND status from USFDA |
| NPS31807-TNF* | Rheumatoid and psoriasis | Phase II completed |
| NPH30907* | Dermatology | Phase II completed |
| NPB00105-Bcr-Abl* | Chronic myeloid leukemia | In Phase I/II |
| PP9706642* | Herpes | Preclinical development |
| P3914 | Non-steroidal anti-inflammatory drug | Preclinical development |
| PM181184 | Methicillin-resistant Staphylococcus aureus/ vancomycin- resistant enterococcus | Preclinical development |

| | | |
|---------------------|------------------------------|---|
| RANBAXY | | |
| RBx11160 | Malaria | In phase III. No USFDA approval. Progressing slowly |
| RX9841 | Urinary incontinence | Phase I completed .Phase II never initiated |
| RBX7796 (Oral & IV) | Allergic rhinitis and asthma | Entered Phase II trial in 2003. Its development was later suspended |
| RBx10558 | Dyslipidemia | Filed an IND with DCGI 2005. Development later suspended |
| RBx2258 | Benign prostatic hyperplasia | Trials suspended by out-licencing partner Schwarz Pharma in Nov.2004 |
| RBx7644 | Anti-bacterial | Development suspended during Phase I trials in 2003 |
| RBx9001 | Benign prostatic hyperplasia | Development suspended during Preclinical development in 2003 |
| RBx6198 | Benign prostatic hyperplasia | Development suspended during Preclinical development in 2003 |
| TORRENT | | |
| TRC4149 | Heart disease | Licensed out to Novartis in 2004. Torrent stop development in 2005 |
| Wockhardt | | |
| WCK771 | Antibiotics | In Phase II of clinical trials. No USFDA approvals |
| WCK1152 | Respiratory infection | Started trials in May 2004. Hasn't progressed since. No USFDA approvals |

Source: BW Online Bureau (2014), 'Death of a Dream,' *Businessworld*, November 08. Available at: <http://businessworld.in/article/Death-Of-A-Dream/08-11-2014-65256/>

Table 8: Disease Type-wise Product Specific R&D Activities of Domestic firms Active in India, 1999–2009

| Domestic Companies | 1999–2001 | | | 2002–2004 | | | 2005–2007 | | | 2008–2009 | | | |
|------------------------------|--------------|----|-----|-----------|----|-----|-----------|----|-----|-----------|----|-----|-------|
| | DISEASE TYPE | | | | | | | | | | | | |
| | I | II | III | I | II | III | I | II | III | I | II | III | Total |
| Orchid Pharmaceuticals Ltd | | | | 2 | | | 6 | | | 2 | | | 10 |
| Sun Pharmaceutical Ltd | | | | | | | 2 | | | 7 | | | 9 |
| Biocon Ltd | | | | 2 | | | 4 | | | 6 | | | 12 |
| Glenmark Pharmaceuticals Ltd | | | | 1 | | | 5 | | 1 | 7 | | | 14 |
| Bharat Biotech Ltd | | | | | | | | 1 | 1 | 3 | | 2 | 7 |
| Alembic Ltd | | | | | | | | | | | | | - |
| Dr.Reddy's Laboratories Ltd | | | | 7 | | | 2 | 1 | | 15 | | | 25 |
| Lupin Ltd | 1 | | | | 1 | | 4 | 4 | | 4 | | 1 | 15 |
| Cadila Healthcare Ltd | | | | | | | 3 | 1 | | 9 | | | 13 |
| Piramal Healthcare Ltd | | | | | | | 7 | | | 5 | | | 12 |
| Wockhardt Ltd | | | | | | | 1 | | | 2 | | | 3 |
| Ipca Laboratories Ltd | | | | | | | | | | 2 | 2 | | 4 |
| Aurobindo Pharmaceutical Ltd | | | | | | | | | | | | | - |
| Torrent Pharmaceuticals | | | | | | | | | | 1 | | | 1 |
| Ajanta Pharma | | | | | | | | | | 7 | | | 7 |
| NatcoPharma | | | | | | | | | | 2 | | | 2 |
| Granules India Ltd | | | | | | | | | | 1 | | | 1 |
| SMS Pharmaceutical | | | | | | | | | | 10 | | | 10 |
| Shanta Biotech | | | | | | | 3 | | 2 | 10 | 1 | | 16 |
| Panacea Biotech | | | | | | | | | | | | 2 | 2 |
| Matrix Laboratories | | | | | | | | | | 3 | | | 3 |
| Grand total | 1 | | | 1 2 | 1 | | 3 7 | 7 | 4 | 96 | 3 | 5 | 166 |

Source: Data collected from individual website & latest annual report of individual pharmaceutical companies and CTRI Clinical trial registry India *Disease type: Type-I, Type-II, Type-III.

*Type-I – Diabetes, Cancer, Metabolic Diseases, Hepatitis, Influenza, Cardiovascular, Infectious Diseases, Inflammatory Diseases, Allergy, Respiratory Diseases

*Type-II – HIV/AIDS, Tuberculosis, Malaria.

*Type-III – Leishmaniasis, Trypanosomiasis, Lymphatic filariasis, Leprosy, Diarrhoea (Neglected diseases of the poor in developing world).

Table 9: Clinical Phases of Compound for Various Diseases by Foreign and Domestic Pharmaceutical Firms, 2007–2009

| Company | Disease Type | | | Status of trial/Phases | | | |
|----------------------------------|--------------|---------|----------|------------------------|----------|-----------|----------|
| | Type-I | Type-II | Type-III | Phase-I | Phase-II | Phase-III | Phase-IV |
| Domestic Firms (16 Companies) | 65 | 3 | 2 | 5 | 20 | 35 | 9 |
| Foreign Firms (9 Companies) | 110 | 3 | 3 | 12 | 23 | 12 | 9 |

*Disease type: Type-I, Type-II, Type-III

*Type-I – Diabetes, Cancer, Metabolic Diseases, Hepatitis, Influenza, Cardiovascular, Infectious Diseases, Inflammatory Diseases, Allergy, Respiratory Diseases

*Type-II – HIV/AIDS, Tuberculosis, Malaria.

*Type-III –Leishmaniasis, Trypanosomiasis, Lymphatic filariasis, Leprosy, Diarrhoea;

Status of involvement of domestic and foreign firms in the trials (Phase-I, Phase-II, Phase-III, Phase-IV)

Source: Clinical Trial Registry Analysis (CTRI) 2007–2009.

Table 10: Therapeutic Area-wise Estimation of Pharmaceutical Projects and Patents and the Pattern of Matches with the National Burden of Disease, 1992–2007

| No. | Major therapeutic areas/Disease/Health conditions | Share in the total burden of disease (%) | Domestic Pharmaceutical project (%) | Foreign Pharmaceutical project (%) | Domestic Cos. Pharmaceutical Patents Percentage (%) of Total Domestic Patents | Domestic Cos. Pharmaceutical Patents Percentage (%) of Total Patents | Foreign Cos pharmaceutical Patents Percentage (%) of Total Foreign Patents | Foreign Cos pharmaceutical Patents Percentage (%) of Total Patents |
|-----|---|--|-------------------------------------|------------------------------------|---|--|--|--|
| 1 | Diabetes | 0.7 | 17.15 | 16.36 | 5.94 | 5.91 | 20 | 0.084 |
| 2 | Cancer | 3.4 | 10.05 | 8.81 | 5.6 | 5.57 | | |
| 3 | Tuberculosis | 2.8 | 1.18 | | 0.50 | 0.50 | | |
| 4 | Malaria | 1.6 | 2.36 | | 0.93 | 0.92 | | |
| 5 | Metabolic disease | - | 7.36 | 0.9 | 6.79 | 6.76 | 20 | 0.084 |
| 6 | HIV/Aids | 2.1 | 0.59 | 0.23 | 0.84 | 0.84 | | |
| 7 | Inflammatory diseases | | 3.55 | 0.67 | 5.6 | 5.57 | | |
| 8 | Infectious diseases/Injuries | 16.1 | 8.28 | 4.54 | 38.96 | 38.79 | | |
| 9 | Respiratory diseases | 1.5 | 4.73 | 5.61 | 1.1 | 1.09 | | |
| 10 | Arthritis | - | | | | | | |
| 11 | Bone disease | - | 4.73 | 6.63 | 1.27 | 1.26 | | |
| 12 | Brain disorders | 8.5 | | 0.56 | 10.18 | 10.14 | 40 | 0.16 |
| 13 | Ulcer | - | | | 0.5 | 0.50 | | |
| 14 | Psoriasis | - | | | 0.33 | 0.33 | | |
| 15 | Cardiovascular | 10.0 | 0.59 | | 2.63 | 2.78 | 20 | 0.084 |
| 16 | Maternal & prenatal problems | 11.6 | 1.34 | | 0.25 | 0.25 | | |
| 17 | Diarrhea | 8.2 | 1.77 | | 0.08 | 0.084 | | |

| | | | | | | | | |
|----|------------------------|------|-------|-------|------|-------|--|--|
| 18 | Heart Disease | - | | | 0.93 | 0.92 | | |
| 19 | Depression | - | | | 3.56 | 3.55 | | |
| 20 | Hypertension | - | | 10.12 | 4.49 | 4.48 | | |
| 21 | Allergy | - | | | 1.78 | 1.77 | | |
| 22 | Hepatitis | - | | 1.81 | 0.16 | 0.16 | | |
| | Leprosy | 0.1 | | | | | | |
| 23 | Childhood disease | 5.4 | | | | | | |
| 24 | Otitis Media | 0.1 | | | | | | |
| 25 | Blindness | 1.4 | | | | | | |
| 26 | Oral diseases | 0.5 | | | | | | |
| 27 | Prosthetic hyperplasia | - | | | 1.01 | 1.014 | | |
| 28 | Others | 25.4 | 30.17 | 18.18 | 6.45 | 6.42 | | |

Source: USPTO from 1992–2007, Company websites and data available on the Burden of Disease from GOI.

An analysis of the disease focus based on tables provided above makes clear the current status of domestic firms' R&D and innovation behaviour. It confirms that the Indian companies consider the domestic market to be of small size and not attractive enough to take up development work on new products in the drugs and pharmaceutical sector. See Table 11 for company-wise figures of investigational new drugs (INDs) registered by domestic companies.

Table 11: Investigational New Drugs (INDs), 2008–2013

| Company Name | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|-----------------|------|------|------|------|------|------|
| DR Reddy's labs | | 2 | 2 | 2 | 4 | 3 |
| Ranbaxy | 1 | 7 | 5 | 6 | | |
| Aurobindo | | | | | 1 | 1 |
| Wockhardt | | 2 | | 2 | | |
| Glenmark | | 8 | 14 | 16 | 9 | 8 |

| | | | | | | |
|---------------------------|----------|-----------|-----------|-----------|-----------|-----------|
| Piramal Healthcare | | 1 | | | 3 | 3 |
| Sun Pharma | 1 | 9 | 18 | 8 | 10 | 5 |
| Lupin | | 4 | | | | |
| Cipla | | 9 | 4 | 11 | 4 | |
| Cadila | 2 | 14 | 21 | 11 | 12 | 7 |
| Glaxosmithkline (foreign) | | 7 | 1 | | | |
| Novartis (foreign) | | 1 | 3 | | | |
| AstraZeneca (foreign) | 2 | 9 | 12 | 8 | 10 | 1 |
| TOTAL | 6 | 73 | 80 | 64 | 53 | 25 |

Source: Compiled by the authors.

Again, this table confirms a declining trend in the submission of INDs from 2010 onward. New product development is certainly not an important outcome of the global integration of domestic pharmaceutical firms. It would not be wrong to suggest that the TRIPS based patent reform system—which favours stronger patents—is not the way to incentivise domestic pharmaceutical firms to invest in new product development in a sustained way. The government needs to intensify its search for alternatives to patents to stimulate drug discovery and development activity of domestic firms.

Domestic Pharmaceutical Firms and Contract Research Route

There is now more investment from domestic pharmaceutical firms towards broadening of activities and services as well as for deepening of the skills required for contract research route. From, initially, custom chemistry services based on the country's long tradition in chemical manufacturing, many of the major Indian Contract Research Organisations (CROs) have evolved toward higher value-added activities such medicinal chemistry, biology, ADME (absorption, distribution, metabolism, and excretion), animal pharmacology and safety studies, and integrated drug discovery capabilities. The terms of recent deals have evolved from Fee-for-service (FFS) and Full-time Equivalent (FTE) agreements to collaborative research agreements, partly shared risk collaborations, with milestone payments and eventually royalty payments in addition to research fee.

This evolution, to a large extent, has been driven by the need of western pharmaceutical companies to address the declining productivity of drug discovery. Outsourcing and partnering with companies in emerging, low-cost countries remains an option for western companies to address rising costs. Most of the major western pharmaceutical and biotech companies have been building

on the valuable resources in India for a number of years through strategic collaborative partnerships and alliances to fuel their in-house discovery and development pipeline. Pharmaceutical companies have been outsourcing non-IP (Intellectual Property) sensitive chemistry activities to India since the late 1990s, when only a limited number of CROs were offering such services.

Several contract research companies capable of pursuing drug discovery collaborations have emerged (Advinus, Aurigene, Jubilant, Syngene), and many others are closely following (e.g., GVK Bio, Orchid, TCG Lifesciences, Torrent, ZydusCadila). These collaborations have produced 71 patent applications and publications. Close to 25 collaborations have been entered into, which illustrates the extent to which major pharmaceutical companies have initiated research activities in India. All the different approaches taken by them in their collaborations with Indian CROs and biotech companies reveal some interesting results in respect of the intellectual property scenario. At least seven out of the top 20 pharmaceutical companies have filed patent applications on the basis of these collaborations. Far less intellectual property is, in contrast, generated in India by pharma companies in the top 21–100. According to Differding (2014), out of the 80 companies studied only five had applied for patents.

So far, several of these alliances have been quite productive for western companies. This is evidenced not only by the significant number of patent applications and publications, but also by the rising number of disclosed preclinical and clinical development candidates that have been injected into R&D pipeline projects of western pharmaceutical companies. Differding (2014) opines that despite progress, very little has appeared in press on the process and progress of drug discovery itself (such as targets or modes of action involved), on scientific output, and on NCEs coming out of India through research collaborations.

More undisclosed compounds are currently under progress in preclinical and clinical development. The vast majority of pharma companies are opting for multiple partners, with the advantages of distributing the inherent risk of drug discovery in general, and of being potentially more competitive in particular as it allows them to select best-in-class partners for each project, such as Endo, Forest, Janssen, Merck Serono, Merck Sharpe and Dohme, and Novartis. Others prefer a strategic collaboration with one carefully selected key partner, thereby decreasing complexity and internal management and communication needs.

Differding (2014) suggests that western pharmaceutical companies have been on a learning curve in their alliances with Indian companies, and many of them have already learned how to successfully generate IP with Indian inventors. It is not unreasonable to speculate that other pharmaceutical and biotech companies will follow. According to a 2011 Boston Consulting Group (BCG) survey of 40 global biopharma companies, more than 70 per cent of executives were satisfied with their Indian R&D alliances, and three out of four expected to increase their R&D

activities in India. This survey reveals how the R&D game is being played, and how India will gain from this game is certainly a matter of further investigation and assessment.

Technology Acquisition by Domestic Firms

Again the claimed benefit of increased technology transfer to domestic firms through contract, alliances and joint ventures is also not evident in the case of India. Foreign technical collaborations have not been important for export; therefore, only small- and medium-scale firms have entered into such collaborations, mostly to cater to the domestic market. Expectations from the route of contract manufacturing are also not clear with regard to technology acquisition in the case of India. Exploiting contract manufacturing will not improve the prospects of technology transfer by itself because there are no new technologies being transferred. Production capabilities can certainly get better on account of the enforcement of Good Manufacturing Practice (GMP) in the case of some firms. Analysis indicates that though players like Matrix Laboratories, Divi or Shasun Chemicals or Cadilla have made much use of this opportunity to grow, their technological capabilities have not been upgraded despite provision of contract manufacturing services. Apart from Ranbaxy and Cipla, which were earlier warned by the USFDA, Matrix was the third drug company working from India for the US market to get a warning from the regulatory authorities of United States¹

There is evidence that as far as the terms and conditions of contract manufacturing of bulk drugs are concerned, the deals being entered into by Indian firms in the post-TRIPS era are far from being equal. Ranbaxy Laboratories and Lupin Laboratories were among the first Indian companies to bag manufacturing contracts from multinational companies—Ranbaxy from Eli Lilly and Lupin from Cynamid. In the pre-TRIPS period, manufacturing contracts came through when Ranbaxy developed an alternative process for manufacturing Eli Lilly's patented drug, Cefaclor, because the American Company sensed that it would lose its markets to Ranbaxy's low cost substitute in countries that did not recognize product patents. Eli Lilly offered a manufacturing contract to Ranbaxy for producing 7 ACCA, an intermediate for Cefaclor, to make the best of a bad situation.

Today, the situation has changed due to the implementation of TRIPS Agreement. Take, for example, the case of Nicholas Piramal. It entered into a joint venture (49:51) with Allergan Incorporated, USA to earn business for the manufacture of bulk drugs. The same is true for its negotiations with UK based Baker Norton to earn business in the form of contract manufacturing. It seems that the growth in contract manufacturing will come about due to the efforts of companies such as Divi, Sashun and Nicholas Piramal India (now taken over by Abbot Laboratories, USA), which have been willing to accept even "subordinate relationships" in their collaborations. See Table 12 for a glimpse into the pattern of CRAMS (Contract Research and Manufacturing Services) activities being undertaken by large domestic pharmaceutical firms since the adoption of TRIPS Agreement in India.

Table 12: Pharmaceutical Companies in CRAMS Activities in India

| Companies in Contract Research (excluding Clinical Trials) | Clinical Trials |
|---|---|
| Nicholas Piramal | Clingene (Biocon) |
| Aurigene (DR. Reddy's) | Jubilant Clinsys (Jubilant Organosys) |
| Syngene (Biocon) | WellQuest (Nicholas Piramal) |
| GVK Biosciences | Synchron |
| Jubilant Organosys | Vimta Labs |
| Divi's Laboratories | Lambada |
| Suven Lifesciences | SiroClin pharm |
| Dr Reddy's Laboratories | Reliance Life Sciences |
| Vimta Labs | Asian Clinical Trials (Suven Life Sciences) |

Source: Annual Report and IDMA news 2007 (International Disease Management Alliance).

It needs to be stressed that not all modes of collaboration lead to enhanced competencies. In-licensing and out-licensing of compounds for further development are primarily market penetration strategies targeted towards increased time and cost efficiency.

Capability Building, Exports to Regulated Markets and Domestic firms

The export of generics to regulated markets of the US and Europe is no longer considered an option for upgrading the capabilities of domestic firms. Domestic companies are currently investing a lot of money into generic market with the intention of making the maximum profit when market competition is less and the margins high. As such things are possible only in the beginning when drugs become off-patent, they file four to five ANDAs every year to be first in the market and exploit the period of exclusivity available under the US drug regulation laws. Experience, however, indicates that the road ahead for export of generics to regulated US market is likely to be tedious and full of hurdles.

To be specific, in the US, under the Hatch-Waxman Act, the government has a system of patent term "restoration" which can extend the monopoly of the original patentee for a maximum of five years, in addition to the initial patent term. In EU, too, there exists a scheme for Supplementary Protection Certificate (SPC). In the US, no ANDA can be submitted until five years after the referenced brand name product gets its first FDA approval if the originator product was the first drug product to contain that active ingredient to obtain approval. Similarly, an ANDA cannot be submitted for three years if an originator's new drug application or supplementary application is supported by new clinical investigations conducted by the applicant and essential for approval (normally for a new indication). As of 1997, the US now allows for an additional six months of

exclusivity as a reward for studying drugs in children. In the US, the first version of an orphan drug is entitled to seven years of exclusivity, preventing approval of an ANDA. The US also allows, as a reward, 180 days exclusivity to the first generic manufacturer to file a successful paragraph IV certification alleging that a listed patent is invalid or not infringed. Thus, as far as the question of export of generics is concerned it faces important IPR related hurdles today in the markets of EU and US

It is clear that Indian pharmaceutical firms cannot expect that the opportunity for developing traditional pharmaceutical generics will automatically fall in their lap. As evidence shows, even in the area of biogenerics a tough fight is in waiting for the Indian pharmaceutical industry. The recombinant products market has been led so far by imports of established global brands and marketing of the products either by local subsidiaries (SmithKline Beecham, Novo) or through marketing arrangements as in the case of Nicholas Piramal and Roche. Though changes have come in due to the recent introduction of local firms such as Shanta, Bharat, Panacea and Wockhardt in the Indian market for products like Hepatitis B Vaccine, Interferon-alpha, insulin and EPO, the situation will change radically after January 01, 2005. As discussed in the earlier section, Indian policymakers should expect litigations to grow in the case of biogenerics. The Indian industry is getting a taste of this at an early stage. Of late, almost all export oriented Indian firms have faced this challenge in the US.

Studies differ in their degree of optimism in respect of the positive effects of stronger patents on product development by local firms based on disclosed foreign patents and on additional R&D efforts. Looking at the domestic sector today, only a handful of firms have been able to increase their R&D investments. Some of these have earlier demonstrated that they can, with the help of public sector research, hone their expertise in creation of new processes for patented products. Dr. Reddy's Group was the first domestic company to file the first two product patent applications for anti-cancer and anti-diabetes substances in the US. However, it is clear that Dr. Reddy's Group does not want to engage autonomously in new drug development. It has been selling its rights to foreign partners because it does not have the capacity to invest further. In fact, it has stopped working after the drug discovery phase. Examples of Wockhardt joining hands with Rhein Biotech GmbH, Germany, Ranbaxy shaking hands with Eli Lilly for development work, and Cipla undertaking custom synthesis and collaborations with Japanese and Swiss firms, indicate the limitations of and opportunities available to Indian firms.

Based on her investigative interviews with executives of domestic firms, Sophia Ackerhans (2016) suggests that the 22 firms and industry experts considered the political framework and government incentives aimed to facilitate R&D collaboration to be of lowest importance in respect of policy and other motives of research and development. Within this category, the aim to access public funding of the host/home government was evaluated with the lowest dispersion, followed by the desire to support the regulatory framework and adapt to the market or regulatory environment.

India does not seem to figure much in the increased strategic R&D alliance activity of the global biopharmaceutical and biotechnology firms. Federica (2014) reveals that a gap exists between R&D deals and manufacturing/marketing deals despite some progress. This study also shows that 60 companies out of the isolated 123 did not report any alliance during the period of observation. There is a simple explanation for this: in biopharmaceutical research the distribution of capabilities is the major determinant of the partner and the mode of alliance. The dynamic of biotechnology in India is also dependent on the overall movement of internationalisation of R&D. Outsourcing markets in clinical trials, R&D, and production are becoming accessible to the locally bred firms of countries like India. Because of many short-term benefits, it is obviously tempting to direct the industry totally or mainly for these markets.

The examples of DRL and Biocon are especially useful for discussion on the conditions for gains to accrue from the contract work being undertaken by these two companies. Both these companies have created several entities, each of them corresponding to a different strategy. DRL is involved in the development of recombinant DNA-based products and has an internal programme of BT-based (biotechnology-based) drug targets discovery. It has also set up a company named Molecular Connections Pvt Ltd, and a contract research company named Aurigene, involved in chemical and biological research for drug discovery. Similarly, Bicon, too, whose core activity is manufacture of industrial enzymes, has set up a contract research subsidiary named Syngene, and a clinical Research Organisation named Clinigene.

However, as far as the contribution of these domestic firms to meet the product development challenge for neglected diseases is concerned, our analysis makes it clear that the current level of opportunities which limit Aurigene, GVK Bio, and Syngene to cloning and getting the genes to express will not allow these companies to build an industry capable of doing cutting edge biotechnology research. At the moment, the mother companies have no intention of interfering with their subsidiaries because of confidentiality agreement signed by them with partners who have outsourced the part of drug discovery or clinical research to them. This means that no technological information can circulate between the company in charge of contract research work and the parent company involved in its own research.

From the standpoint of priorities of public health protection, the moot question is- How will it benefit the country in terms of promotion of indigenous drug discovery and development efforts? As mentioned earlier, it is clear that under the existing policy environment and the emerging conditions of competition in the global pharmaceutical industry, locally bred firms of developing countries are likely to be lured by the multinational corporations to work for the western markets. The situation as it stands is that pharmaceutical research is largely directed towards the needs of the western markets. The message is clear that the industry is least concerned with undertaking of R&D for neglected diseases of the poor.

Nature of Interdependence Emerging at the Level of Industrial Networks and Science Industry Links

Assessment of relationships forged through acquisitions, alliances, collaborations and agreements while undertaking Outward Foreign Direct Investment (OFDI) indicates that for the establishment of appropriate industrial networks these firms have failed to give priority to the objective of capability building for development of new drugs. See Tables 13 and 14 for details on the pattern of functions being served through acquisitions of foreign firms and divisions made by these 14 firms.

Analysis suggests that R&D related acquisitions are far less in number than acquisitions for marketing and production activities. In case of all 14 firms, the number of alliances, collaborations and acquisitions remained skewed in favour of the purposes relating to marketing, manufacturing and supply of R&D services. Their acquisitions were mainly for strengthening their foreign markets. Assessment also indicates that a very small number of firms are involved in asset augmentation for the purpose of manufacturing. R&D alliances and collaborations involve still fewer firms.

Compared to the acquisition of manufacturing and distribution arms abroad by each and every firm in the sample, only a small number of companies have acquired firms abroad with the motive of upgrading R&D capabilities. As far as the number of acquisitions made for the purpose of boosting drug discovery R&D is concerned, it is a small number reflecting the bias of ties and connections under establishment. See Table 14 for details on the types of R&D being served through acquisitions made by these firms during the period under observation.

Table 13: Type of R&D & Marketing Acquisitions Pattern of Indian Pharmaceuticals, 1999–2011

| Companies | R&D acquisitions | | Sub total | Marketing/Productions acquisitions | | Sub total | Total of all acquisitions |
|--------------------------------------|-----------------------|----------------------|-----------|------------------------------------|----------------------|-----------|---------------------------|
| | Firms | | | Firms | | | |
| | Domestic acquisitions | Foreign acquisitions | | Domestic acquisitions | Foreign acquisitions | | |
| Top 14 leading Indian Pharmaceutical | 2 | 20 | 22 | 3 | 72 | 75 | 97 |

Source & Notes: individual Company website Press releases, News, Archive etc, data accessed as on Nov 2011; # Top 14 leading Indian Pharmaceutical Industries are: (*Ranbaxy laboratories, Cipla Ltd, Dr. Reddy's Laboratories, Cadilla healthcare, Biocon Ltd, Sun pharmaceuticals, Lupin

Ltd, *Piramal healthcare, Glenmark pharmaceuticals, Torrent pharmaceuticals, Strides arcolab, *Wockhardt Ltd, IPCA laboratories, *Orchid pharmaceuticals).

Table 14: Type of R&D Acquisitions with Industries, 1999–2011

| Companies | Discovery R&D | | Sub total | Clinical development | | Sub total | Research services | | Sub total | Grand total |
|--------------------------------------|---------------|----|-----------|----------------------|----|-----------|-------------------|--------|-----------|-------------|
| | DO | FO | | D O | FO | | DO | F O | | |
| Top 14 leading Indian Pharmaceutical | | | | | | | 2 | 20 | 20 | 22 |

Source & Notes: As provided in Table 13.

See Table 15 for details on the types of alliances, collaborations and agreements signed by these firms with research institutions and firms, both foreign and domestic. Analysis shows that R&D acquisitions have been made mostly for the purpose of establishing research service facilities for the benefit of generic entry. Research services function seems to dominate acquisitions made with the objective of establishing facilities in the host country for preparing dossiers and undertaking laboratory work. Foreign firms account for the maximum number of alliances, collaborations and licensing agreements entered into by these firms during the period under observation.

In case of R&D related ties, research services function dominated the relationships forged with foreign companies. It is also clear that these firms did very little to use the alliances, collaborations and agreements to strengthen their drug discovery. Discovery R&D was the objective of forging a relationship with foreign firms in far fewer cases compared to research services and clinical trials. However, these firms have hardly used these relationships for strengthening of R&D function and new drug discovery and development; even in their relationships with foreign firms it is the short-term objectives which seem to have dominated.

Table 15: Type of R&D Alliances, Collaborations and Licensing Agreements, 1999–

| Top 14 Pharma Industries in India | | R&D alliances | | | R&D Collaborations | | | IN Licensing | | | OUT Licensing | | |
|-----------------------------------|----------|---------------|----------------------|-------------------|--------------------|----------------|-------------------|---------------|----------------|-------------------|---------------|----------------|-------------------|
| | | Discovery R&D | Clinical development | Research services | Discovery R&D | Clinical Trial | Research services | Discovery R&D | Clinical Trial | Research services | Discovery R&D | Clinical Trial | Research services |
| RI/AI | Domestic | 2 | | 1 | 5 | 3 | 1 | | | 1 | | | |
| | Foreign | | | | 2 | 4 | 3 | | | | | | |
| Industry | Domestic | | 1 | | 1 | 1 | | | | 1 | | | |
| | Foreign | 2 | 2 | 8 | 12 | 17 | 19 | | 5 | 6 | | 4 | 5 |
| Grand total | | 4 | 3 | 9 | 20 | 25 | 23 | | 5 | 8 | | 4 | 5 |

2011

Source & Notes: As provided in Table 13; RI: Research Institution, AI: Academic Institution; Alliances and collaborations have been distinguished on the basis of the time horizon involved, alliances involve long-term ties.

Not only are domestic pharmaceutical firms ready to out-license clinical development of their NCEs to firms that have considerable market operations in the sector of drugs and pharmaceuticals in India, but also they are entering into in-licensing deals for undertaking bioequivalence studies in case of formulations and dosages. In-licensing arrangements are being used to build a portfolio for the purpose of growing in the domestic market. For example, Nicholas Piramal has had arrangements with Roche for launching products relating to cancer, epilepsy and AIDS. Glenmark has in-licensed Crofelemer, Napo's proprietary anti-diarrheal compound. Wockhardt has had arrangements for the in-licensing of SyrioPharma SpA for dermatological products. Ranbaxy has had arrangements with KS Biomedix Ltd for EMRs to market Trans MID in India with an option to expand into China and other South East Asian Countries.

Foreign firms are apparently gaining financially and control far more R&D and marketing relationships than what these companies could forge through OFDI. Take the examples of out-licensing and in-licensing agreements being signed by these companies. In case of in-licensing agreements, payments to foreign firms are on a recurrent basis with guaranteed returns. Imbalance is also evident at the level of number of agreements entered into by these companies for marketing

and research. Marketing as a purpose dominates the agreements. In-licensing agreements in R&D area are for bioequivalence studies. In respect of product development, the area of bioequivalence is not a gap that has to be filled through in-licensing agreements. However, this is not the case when one analyses the out-licensing deals because the agreement pertains to clinical development of earlier phases and pre-clinical toxicology studies.

Domestic ties with research institutions and the academia have received the least attention from emerging Indian pharmaceutical multinationals. Although domestic firms are the major beneficiaries of R&D services sourced from public sector research laboratories, there are very few alliances for undertaking collaborative drug discovery and development related R&D work between domestic firms and public sector research institutions. Just two firms used the domestic R&D institutions for the purpose of R&D alliances. See Table 16 for the pattern of ties built with domestic R&D institutions for clinical and discovery R&D by these firms during the period 1999–2011.

Table 16: Type of R&D Alliances with RI/Academia

| Companies | Clinical & Discovery R&D | | Sub total | Research services | | Sub total | Grand total |
|---------------------|--------------------------|----|-----------|-------------------|----|-----------|-------------|
| | DO | FO | | DO | FO | | |
| IPCA laboratories | 1 | | 1 | | | | 1 |
| *Piramal healthcare | 1 | | 1 | 1 | | 1 | 2 |
| Total | 2 | | 2 | 1 | | 1 | 3 |

Source & Notes: As provided in Table 13. Among the 14 leading Pharmaceutical companies, only IPCA and Piramal have concluded alliance style cooperation with RI/academia.

See Table 17 for details on the strengthening of market function through new ties with foreign firms. It is evident that marketing activity related relationships dominate alliances and collaborations. Some of the Indian pharmaceutical firms prefer to rely only on marketing alliances abroad instead of setting up subsidiaries or production facilities.

Table 17: Pattern of Marketing Alliances, Collaborations and Licensing Agreements,

| Top 14 Pharma Industries in India | Marketing alliances | | Marketing Collaborations | | IN Licensing (Marketing) | | OUT Licensing (Marketing) | |
|-----------------------------------|---------------------|---------|--------------------------|---------|--------------------------|---------|---------------------------|---------|
| | Domestic | Foreign | Domestic | Foreign | Domestic | Foreign | Domestic | Foreign |
| Industry | 10 | 111 | 5 | 101 | | 21 | 2 | 6 |
| Grand total | 10 | 111 | 5 | 101 | | 21 | 2 | 6 |

1999–2011

Source & Notes: As provided in Table 13.

Further, we also note with some concern that most of these firms have chosen to enter into alliances, collaborations and agreements with foreign firms having presence in the Indian market. By forging a close relationship for the supply of contract research and manufacturing services with these foreign actors having a global presence, quite a few of these firms have made it clear that they have no plans to compete with big pharmas, either in the domestic market or the foreign market. Lupin has a marketing alliance with Cornerstone to market Suprax. DRL has an alliance with Pilvafor development and marketing of oncology products in Europe; DRL and Glaxo-Smithkline have a multi-product agreement; DRL is collaborating with Pharmascience Group for development and marketing of generic products in Canada; and, Glenmark has a supply and marketing agreement with Lehigh Valley. Certainly, some of these marketing alliances reflect an element of strategic choice. At the moment DRL, Glenmark and Lupin are, seemingly, examples of strategic elements guiding their relationships, but it is not the case with most firms whose relationships we have analysed.

Evidence of dominance of marketing function is clearly indicated in different types of relationships forged by each of the 14 firms. Cases of domestic R&D institutions being targeted for in-licensing agreements are very few. In some cases, global pharmaceutical companies are out-licensing their products to Indian firms. This relationship brings regular royalty payments at minimum investment with a wider geographical coverage for their products. Strides Acrolab Ltd has entered into a number of such deals with companies in the US, UK, Japan and Europe. Clinical outsourcing is also being treated as a lucrative strategy by some Indian firms. Cadila Healthcare has entered into alliances with Atlanta Pharma, Schering AG, and Boehringer Ingelheim. Lupin has a licensing agreement with Cornerstone Bio Pharma Inc for clinical development of NDDS for an anti-infective product.

Ranbaxy has entered into a few collaborative research programmes involving global pharmaceutical firms, e.g. with Medicines for Malaria Venture (MMV), Geneva, for an anti-

malarial molecule, Rbx 11160; with GlaxoSmithKline for drug discovery and clinical development for a wide range of therapeutic areas; with University of Strathclyde, UK, in new drug delivery system (NDDS); Ranabaxy has a collaborative relationship with Eli Lilly, Pfizer and Novartis in drug discovery and with Vectura (a drug delivery company) for development of platform technologies in the area of oral controlled release system. Ranabaxy, Reddy's Laboratories, Lupin, Glenmark, Torrent, Sun pharmaceutical, Cadila and Biocon figure prominently in the agreements, collaborations and alliances entered into for the purpose of R&D. But there are only a few examples of collaborative R&D programmes which follow one or another kind of risk sharing involving joint venture or collaboration with another pharmaceutical company in order to develop and commercialise a product. They are largely entering into one-way relationships, which may hardly prove advantageous in the long run.

Torrent has entered into a collaborative research programme for drug discovery in the area of treatment of hypertension with AstraZeneca. Dependent or potentially compromising relationships will not benefit the firms as much and can affect the national system of innovation adversely when pressure is being mounted on the industry to accept TRIPS plus provisions of data exclusivity. Of course, there are some exceptions. Cipla has entered into a collaborative programme of risk sharing type with a domestic company set up by a non-resident Indian, namely Avesthagen Laboratories, to produce biogeneric drug for Arthritis, N-Bril. Although Avesthagen has an ongoing collaborative programme with Nestle, BioMereleux, France and other companies, Cipla's relationship with Avesthagen is unlikely to prove compromising and can be handled independently.

Domestic companies consider the domestic market to be of small size and not sufficiently attractive for taking up development of new products in the drugs and pharmaceutical sector. See Table 18 for the pattern of disease orientation of compounds launched. Most of the compounds in demand belong to the category of Type I diseases. In the absence of stimulus for augmentation of home country demand, the conditions continue to favour the target of low value added products required by global markets. It is this imbalance in policy design which is reinforcing skewed research priorities in the public sector research system. From the point of view of current public health situation, this certainly does not suit the country on whose shoulders the domestic industry still depends.

Table 18: Domestic Pharmaceutical Activities of Commercialised/Launched Generic Compounds

| Domestic Companies | 1999–2001 | | | 2002–2004 | | | 2005–2007 | | | 2008–2011 | | | Total |
|---|--------------|----|-----|-----------|----|-----|-----------|----|-----|-----------|----|-----|-------|
| | DISEASE TYPE | | | | | | | | | | | | |
| | I | II | III | I | II | III | I | II | III | I | II | III | |
| <i>Top 14 leading pharmaceutical industries</i> | 5 | | | 27 | 4 | 2 | 52 | 6 | 4 | 79 | 20 | 3 | 202 |

Source: Data collected from individual website & latest annual report of individual pharma companies and Cygnus research, data accessed as on Nov 2011; *Disease type: Type-I, Type-II, Type-III: *Type-I- Diabetes, Cancer, Metabolic Diseases, Hepatitis, Influenza, Cardiovascular, Infectious Diseases, Inflammatory Diseases, Allergy, Respiratory Diseases; *Type-II – HIV/AIDS, Tuberculosis, Malari; *Type-III- Leishmaniasis, Trypanosomiasis, Lymphatic filariasis, Leprosy, Diarrhoea.

There is evidence of a shift in R&D priorities. Analysis of the evidence processed by us shows that all important developments that we see in respect of the creation of R&D capabilities for new drug discovery and development within Indian firms have a global market favouring R&D orientation. As things stand now, it is clear that pharmaceutical research is largely directed to the needs of the regulated markets of the US and Europe. Even high burden disease areas in India have not been able to attract locally bred firms. Analysis indicates preponderance of medium burden disease areas—Cancer (3.4), Tuberculosis (2.8), HIV/Aids (2.1), Malaria (1.6), Respiratory diseases (1.5), Blindness (1.4), Diabetes (0.7)—being covered by the firms in their relationships with academic institutions and industry networks. See Table 16 for the pattern of coverage of different types of diseases in academic alliances and collaborations.

Table 19: Pattern of Coverage of Different Types of Burden of Diseases in Academic Collaborations and Alliances, 1999–2011

| Companies | Collaborations & Alliances for Discovery & Clinical R&D with RI/Academia | | | | | |
|---|--|-----------------------------|--------------------------|---------------------------|-----------------------------|--------------------------|
| | Domestic Institutions | | | Foreign Institutions | | |
| | High burden disease areas | Medium burden disease areas | Low burden disease areas | High burden disease areas | Medium burden disease areas | Low burden disease areas |
| <i>Top 13 leading pharmaceutical industries</i> | 4 | 15 | 3 | | 1 | |

Source: Individual Company website Press releases, News, Archives, etc.

Table 20: Pattern of Coverage of Different Types of Disease Burden for New Chemical Entities under Development by Indian Pharmaceutical Companies, 1999–2011

| Companies | NCE's Pipeline | | |
|--|---------------------------|-----------------------------|--------------------------|
| | High Burden Disease Areas | Medium Burden Disease Areas | Low Burden Disease Areas |
| Top 13 leading pharmaceutical industries | 17 | 34 | 32 |

Source & Notes: As provided in Table 11.

See Table 17 for the pattern of coverage of diseases as focus of development of NCEs among these firms. The table shows the development of new chemical entities (NCEs) through alliances formed with foreign firms for drug discovery and clinical trials. The focus is on medium burden diseases like Cancer, Tuberculosis, HIV/Aids, Malaria, Respiratory diseases, Blindness and Diabetes, which affect both the developed and the developing countries. Diseases for which capability development is being undertaken with the help of foreign firms are those in which the developed world has more interest. The Indian scenario, in terms of high burden disease areas has garnered the least interest over the years.

Impact of government R&D schemes

While the industry is complaining about the rather small size of government funding for direct benefit of R&D in industry, it is interesting to note that they are not even utilizing the existing schemes in a big way. Medium burden diseases are a major focus of the projects undertaken by the industry. This is because of the worldwide emphasis on many of those diseases at the level of R&D funding. The impact of OFDI connections on the lack of balance in R&D priorities is starkly visible in case of use of government schemes by the emerging Indian pharmaceutical multinationals. Table 21 indicates that most of the emerging Indian pharmaceutical multinationals have not been leveraging government funding for undertaking industrial R&D.

Table 21: Pattern of Coverage of Different Types of Burden of Diseases in Industrial Collaborations and Alliances, 1999–2011

| Companies | Collaboration & Alliances for Discovery and Clinical R&D with Industry | | | | | |
|--|--|-----------------------------|--------------------------|---------------------------|-----------------------------|--------------------------|
| | Domestic Firms | | | Foreign Firms | | |
| | High burden disease areas | Medium burden disease areas | Low burden disease areas | High burden disease areas | Medium burden disease areas | Low burden disease areas |
| Top 14 leading pharmaceutical industries | 1 | | | 15 | 31 | 19 |

Source: As in Table 15.

Table 22: Pattern of Government Funding Agencies Programmes/Schemes funded Burden of Diseases by Industry, 2005–2011

| Funding Agencies | High Burden | Medium Burden | Low Burden | Total |
|--------------------|-------------|---------------|------------|------------|
| DPRP | 23 | 30 | 13 | 66 |
| BIPP | 6 | 5 | 1 | 12 |
| SBIRI | 2 | 14 | 10 | 26 |
| Grand Total | 31 | 49 | 24 | 104 |

Source: Compiled by the authors from the information available on these schemes

Table 23: Firm-wise Pattern of Government Funding Agencies Programmes/Schemes Funded Burden of Diseases by Industry, 2005–2011

| Companies | DPRP | | | BIPP | | | SBIRI | | |
|---|-------------|---------------|------------|-------------|---------------|------------|-------------|---------------|------------|
| | High Burden | Medium Burden | Low Burden | High Burden | Medium Burden | Low Burden | High Burden | Medium Burden | Low Burden |
| Total no of Projects in different classes of disease burden | 23 | 30 | 13 | 6 | 5 | 1 | 2 | 14 | 10 |
| Torrent Pharma | - | 1 | 4 | - | - | - | - | - | - |
| Ranbaxy Laboratories | - | 5 | - | - | - | - | - | - | - |
| Strides Arcolab | 1 | - | - | - | - | - | - | - | - |
| Lupin Pharma | 1 | - | 1 | - | - | - | - | - | - |
| Cadilla Healthcare | - | 3 | - | - | - | - | - | - | 1 |
| Biocon Ltd | - | - | - | - | 1 | - | - | - | - |
| Total | 2 | 6 | 5 | - | 2 | - | - | - | 1 |

Source: Compiled by the authors from the websites of the ministries administering these schemes.

More than half of these 14 large domestic firms chose to ignore—almost completely—the schemes formulated by the government industrial research financing altogether. There were only six firms out of the 14 that undertook government funded projects funded for creation of facilities and activities required for development of new drugs. But large domestic firms accounted for just 15 projects in the portfolio out of the 104 sanctioned by the government. See Tables 22 and 23 for the pattern of diseases covered by domestic firms while using government funded programmes and schemes initiated for the benefit of pharmaceutical innovation.

Since domestic firms have not come forward in a big way to use government schemes for R&D and innovation of therapeutics for tackling priority diseases, it is obvious that the national links of these firms are only getting weaker instead of becoming stronger. Despite the government

agreeing to cede the ownership of intellectual property rights (IPRs) to collaborating firms, there is lack of interest among emerging Indian pharmaceutical multinationals in these schemes. Some of these firms have now been sold by their promoters to foreign firms. Certainly, OFDI connections of the strategies of the emerging Indian pharmaceutical multinationals are adversely affecting the plans of the policymakers for the development of a national system of innovation for the benefit of Indian pharmaceutical industry.

Emerging Relations of Domestic Firms with Public Sector R&D

On the issue of emerging relations of public sector R&D with industry, the main challenge is that public sector R&D institutions maintain a long-term vision and strategy directed by public health priorities where citizens have a first claim on their outcomes. See Table 24 for the current status of matches and mismatches of R&D priorities under perusal along with the priorities of burden of disease in the public sector. It appears that there are too many mismatches to be taken care of, which reflect a clear systemic failure seemingly connected to the determination of disciplinary priorities of the Indian scientific community in the west and the decisions of the government to subject the public sector to short-term demands of private sector in the post-TRIPS period. In the absence of stimulus for augmentation of home demand, the conditions continue to favour the target of low value added products required by global markets. It is this imbalance in policy design which is reinforcing skewed research priorities in the public sector research system.

Table 24: Comparison with Disease Burden of Public Sector Projects from 1992–2007

| No. | Major therapeutic areas/Disease/Health conditions | Share in the total burden of disease (%) | IMR Projects (%) | EMR Projects (%) | Public Sector Patents as Percentage (%) of Total Patents |
|-----|---|--|------------------|------------------|--|
| 1 | Diabetes | 0.7 | 2.08 | 8.29 | 5.96 |
| 2 | Cancer | 3.4 | 12.71 | 19.21 | 13.1 |
| 3 | Tuberculosis | 2.8 | 8.30 | 12.66 | 6.37 |
| 4 | Malaria | 1.6 | 10.38 | 5.24 | 9.87 |
| 5 | Metabolic disease | - | | | 4.73 |
| 6 | HIV/Aids | 2.1 | 8.43 | 10.26 | 9.85 |
| 7 | Inflammatory diseases | | | | 2.05 |
| 8 | Infectious diseases/Injuries | 16.1 | | | 24.27 |

| | | | | | |
|----|------------------------------|------|-------|------|------|
| 9 | Respiratory diseases | 1.5 | | 1.74 | 2.26 |
| 10 | Bone disease | - | | 2.35 | 1.4 |
| 11 | Brain disorders | 8.5 | | 4.71 | 2.26 |
| 12 | Ulcer | - | | | |
| 13 | Psoriasis | - | | | |
| 14 | Cardiovascular | 10.0 | 1.43 | 2.18 | 4.11 |
| 15 | Maternal & prenatal problems | 11.6 | 5.96 | 3.02 | 5.25 |
| 16 | Diarrhoeal diseases | 8.2 | 0.26 | 1.39 | 0.20 |
| 17 | Heart Disease | - | | | |
| 18 | Depression | - | | | 0.41 |
| 19 | Hypertension | - | | | 2.26 |
| 20 | Allergy | - | | | |
| 21 | Hepatitis | - | 3.37 | 5.02 | 2.44 |
| 22 | Leprosy | 0.1 | 4.15 | 3.93 | 2.24 |
| 23 | Childhood disease | 5.4 | 2.52 | 1.21 | 0.41 |
| 24 | Otitis Media | 0.1 | | | |
| 25 | Blindness | 1.4 | | | 0.2 |
| 26 | Oral diseases | 0.5 | | | 0.3 |
| 27 | Prosthetic hyperplasia | - | | | |
| 28 | JE | | 3.11 | | 0.61 |
| 29 | Dengue | | 3.11 | 0.43 | 0.41 |
| 30 | Leishmaniasis | | 9.86 | 4.80 | 3.29 |
| 31 | Others | 25.4 | 23.48 | | 12.1 |

Source: Project specific database built by the authors from the public databases on R&D projects and patenting activities being undertaken by the public sector R&D organisations in India, 2009.

Public-Private Partnership (PPP) is the latest buzzword in the system of health research and technology development. In India, The *New Millennium Indian Technology Leadership Initiative (NMITLI)* of the Council of Scientific and Industrial Research (CSIR), Drugs and Pharmaceuticals Research Programme (DPRP) and Technology Development Board (TDB) of Department of Science and Technology (DST) and Small Business Innovation Research Initiative (SBIRI) of Department of Biotechnology (DBT) constitutes the main example of a public private

partnership. Strong experience has been gathered through these schemes in respect of the determinants of success in implementation of PPPs. A large number of NMITLI based PPPs have preferred to catalyse health innovation as a vehicle for domestic industry, mainly to attain global leadership in selected niche areas by synergising the best competencies of publicly funded R&D institutions, academia and private industry.

NMITLI was responsible for supporting 42 R&D initiatives in various fields including new targets, drug delivery systems, bioenhancers and therapeutics for psoriasis, tuberculosis, pain management in osteoarthritis, insulin sensitisation in diabetes mellitus type II and process of tamiflu, etc., with nearly 287 partners, 222 in public sector and 65 in private sector with an estimated outlay of over Rs 300 crore. Analysis of SIBRI efforts (37 cases till May 2008) shows that there is not much focus on diseases of Indian interest though a couple of cases pertain to malaria and typhoid. Similarly, in the case of DPRP, it is known that the government had to add a special grant-in-aid programme for promotion of research on neglected diseases because in the earlier years the programme was unable to attract domestic companies to work on these areas.

Conceived in 2003, the Golden Triangle partnership is also now receiving special budgetary support for an integrated technology mission focused on the development of Ayurveda and traditional medical knowledge that synthesizes modern medicine, traditional medicine, and modern science. Similarly, efforts towards traditional medicine have also picked up momentum. The CSIR and ICMR (Indian Council of Medical Research) are working with the Department of Ayurveda, Siddha, and Homeopathy to bring out safe, efficacious, and standardised classical products for identified disease conditions. New Ayurvedic and herbal products for diseases of national/global importance are also being pursued. Innovative technologies are being used to develop single and poly-herbal-mineral products, which have the potential for IP protection and commercial exploitation by national/multinational pharma companies.

Areas identified are limited to mainly rasayana (rejuvenators/immunomodulators) for healthy aging, joint disorders, memory disorders, bronchial allergy, fertility/infertility, cardiac disorders (cardio-protective and antiatherosclerotic), sleep disorders, and diabetes. Identifying the strengths and weaknesses of existing modern medical products, the strategy seeks to develop new products to address gaps; formulate an appropriate R&D strategy for standardisation, quality control, IP, and other related issues; take up toxicity/efficacy studies in government laboratories, medical colleges, and universities; prepare detailed dossiers of effective formulations; and, negotiate with an identified industry partner to begin commercialisation after clinical trials are carried out using standard protocols. This ambitious multiagency programme proposes to spend more than Rs350 million in the next three years. Several areas have already been identified and research is underway.

Failure in Respect of Steering and Coordination

Although major steps have been identified by the government appointed expert groups with regard to national health research policy, plan and system development, most of these steps are still awaiting implementation. In order to take care of many such concerns, establishment of a

national health management research forum was proposed in the health research policy document. This forum is also yet to be set up by the government. Action is also required to be undertaken to strengthen the role and place of medical colleges in the system of health R&D in India. Relatively speaking, medical colleges are still a weak component, lacking in institutionalised capacity for research. Physician-scientists are vital to the advancement of medical knowledge as they bring to medical research the unique perspective of asking scientific questions inspired by their experience of caring for patients. Physician-scientists working on rare diseases and pursuing translational research in academic institutions and medical colleges/hospitals are a rare breed in India. As there is an urgent need to fill the physician-researcher gap in India, the government needs to take an urgent look at the status of institutionalised capacity for health research in medical colleges and academic institutions.

The system of health research is lacking in both learning and reflection; the government is yet to give attention to the creation of this capacity. Mechanisms are required to be created for a systematic health research system analysis to be undertaken on a periodical basis by the Department of Health Research. Other concerns are also required to be taken care of for the promotion of R&D and S&T (Science & Technology) departments' extra mural research priorities, stability of funding, network development and access related IP management issues. Evidence collated as a part of the preliminary health research system analysis (HRSA) undertaken has confirmed, in many specialties, important gaps & mismatches, narrow research base in many areas, fragmentation of research effort, lack of coherence, development gap, competence in biology for drug discovery work being not adequate, and so on. Some examples of research imbalances are indicated here as illustrations. It appears that besides the importance of increasing research efforts on neglected diseases in India, one can talk of underdevelopment of toxicology research and drug development for treatment of arsenic and lead. There are about 1000 qualified occupational health professionals in India and only 100 qualified hygienists. The country needs close to 8000 qualified occupational health professionals and there is obviously a tremendous gap between the need and availability of qualified personnel.

India, however, has been witnessing a spurt in research investments for neglected diseases. Some of the international partners include (i) WHO Special Programme for Research and Training in Tropical Diseases (TDR), (ii) the Global Alliance for Tuberculosis Drug Development (TB Alliance), (iii) the Medicines for Malaria Venture (MMV) for Malaria vaccine, (iv) the International AIDS Vaccine Initiative (IAVI) for HIV/AIDS Vaccine, (v) the Institute for One World Health (iOWH), (vi) Drugs for Neglected Diseases Initiative (DNDi) for sleeping sickness, Chagas disease, leishmaniasis, and malaria, (vii) Programme for Applied Technology for Health (PATH) for JE vaccine, and (viii) Concept Foundation for microbicides. The MMV is collaborating with Ranbaxy for developing anti-malarials. The Institute for OneWorld Health (IOWH) is collaborating with the ICMR in the clinical trials of paromomycin for visceral leishmaniasis.

Earlier in 2003–2004, for the segment of neglected Type III diseases, India had also taken another important initiative for development of new generation vaccines for cholera, malaria,

tuberculosis, Japanese encephalitis (JE) and HIV/AIDS. Projects initiated as a part of Jai Vigyan programme of the Ministry of Science & Technology are known to be following a different route of PPPs where collaboration in technology development involves partners located in the advanced world for technology transfer. Under this initiative, the government had also signed a number of technology licensing agreements to obtain technologies required for tackling the diseases of the poor. Of the 21 technology missions for integrated R&D that will benefit rural people, the development of new generation vaccines is an important time-bound initiative. The main objective is to develop candidate vaccines for cholera, rabies, JE, tuberculosis, malaria, and HIV infections using novel strategies. These include recombinant proteins; DNA vaccines; recombinant/peptide vaccines for cholera, malaria, tuberculosis, JE, and rabies (for animals and humans); and preventive/therapeutic DNA candidate vaccine(s) for HIV infection.

Even now there is considerable activity going on in public sector research organisations in the fields of genomics and proteomics in India. It is possible to conceive a route of public-private partnership to give momentum to the field of discovery and development research in the area of pharmaceuticals that will take care of the priorities of national public health and neglected diseases of the poor of developing world as a whole. Although at the moment the future of pharmaceutical production innovation appears to be—in a critical way—in the hands of these companies' potential partners abroad, the outcomes of public sector R&D can be leveraged to align their priorities with the public health goals if the pathways and models of innovation are redirected suitably.

From the above analysis it is clear that the leadership has also been willing to subject the priorities of public sector R&D organisations to short-term priorities of the domestic industry during the post-TRIPS period. The scientific community did not resist the pressures and inducements. Leadership of the scientific community clearly did choose to give a higher priority to the R&D work to be undertaken on the problems of ageing disorders, psoriasis, rejuvenates and so on rather than putting in money into products for neglected diseases (Type III). However, with the intervention of public sector agencies the situation can change for the better. It is essential to plan, monitor and evaluate public sector R&D institutions on the basis of public health priorities. Here, too, the results will be in favour of public health if the agency is determined to pursue the roadmap for the development of products that are required locally and have the support of public health system.

4. CONCLUSION

Contrary to expectations of policymakers, growing global integration is failing to generate the “best case conditions” predicted to be prevailing for the prospects of industrial upgrading of the pharmaceutical sector and knowledge creation for the acceleration of catching-up process and for the benefit of public health in India. Large-sized domestic firms are making far more investments in marketing activities than in competence building, interactive learning and innovation making activities. Domestic firms have failed to utilise the strategic advantage of industrial capabilities developed with the help of public investment. The primary incentive to invest in R&D, whether for NCEs, modifications or development of generics, has not arisen in a big way from the new TRIPS-compliant product patent regime in India. While in the post-TRIPS era the government has been

able to accelerate the contribution of in-house R&D to the emerging pharmaceutical innovation making landscape because of the anticipated shrinkage of off-patent opportunities for domestic firms, it is also true that even in the absence of TRIPS such R&D activities would still have been possibly undertaken by quite a few domestic firms because of their decision to enter the regulated markets to take advantage of the opportunities opened for generics.

While R&D activities have diversified, no NCE has yet been developed. Domestic pharmaceutical firms are yet to prove their competence in respect of the development of new products. There have been several setbacks and the partnership model has not always worked properly. Little has changed to dispute the traditional wisdom that developing countries should not grant product patent protection (Chaudhuri, 2007)¹. It is necessary to accelerate the processes of learning, competence building and innovation making by establishing a clear national strategy with the aim of strengthening the place of domestic pharmaceutical firms and of enhancing the systemic autonomy and coherence of national system of innovation. Policy intervention in the way of increasing the size of domestic market and rapidly expanding the knowledge base in the public sector with the aim to encourage domestic firms to undertake more technological activities directed at meeting the needs of Indian people has been suggested as a remedial step.

Coming to the beginning of the change in the composition of drivers of funding for research for health in favour of Type-III diseases and traditional medicine, in India the enabling environment to steer and coordinate, manage, appraise, articulate demand and appropriate IPRs is still missing. Markets for knowledge and technology are by no means neutral space; policy interventions for industrial upgrading have to take into account that there is an international division of labour being constituted through the route of outsourcing. Innovation systems must stay clear of the traps that this division of labour is laying down for domestic firms. As things stand today, it would not be possible for domestic firms to grow beyond a point through the selected routes of export of generics and contract work in research and manufacturing. These routes can be used to only supplement the strategy of expanding the domestic market but to mainly depend on these routes for further growth would take the domestic firms away from the real needs based innovation. It is likely that most domestic firms will ultimately settle down to accept the role of junior partners in the new game of proteomics and genomics based innovation wherein the R&D platform/tools are already monopolised via the route of strong IPRs.

Prospects for domestic R&D for neglected diseases and conditions will improve only when the constraint of market size are suitably eased for the benefit of local pharmaceutical firms. To alleviate the constraint of small market size the Indian government must also step in to improve the demand conditions. In the recent period, health expenditure has been declining across the board in India. This is a direct consequence of the implementation of neoliberal fiscal strategy. It is too much to expect from domestic pharmaceutical firms—whose revenues are insecure—to contribute to R&D investment for neglected diseases under the situation of declining public health expenditure.

Policymakers will also have to seek significant changes on the side of supply of innovation capacities if their new strategies for industrial upgrading are to obtain significant success. They need to get the private sector to coordinate with the public sector in the creation of a programme for upgrading innovation capacities in order to play a positive role in drug development for diseases of the poor in India. Policymakers will also have to target for direct support for R&D facilities for clinical trials. Domestic firms should not get incentivised for inappropriate product targets. Dependent relationships being forged through excessive reliance on low quality contract work in both manufacturing and research will have to be discouraged. Decoupling of research costs from price of product under sales can be an important step in the appropriate direction. Rewards for R&D financing need to be redesigned to discourage inefficient and unfair innovation work. For example, the encouragement to invest in India in the case of Open Source Drug Discovery (OSDD) movement does not rely on monetary incentives. It also offers the model for emulation to achieve the goal of decoupling of R&D from the price of product. Licensing mechanisms need to be used to maximise access. Pressures on the Indian government to desist from issuing compulsory licenses (CLs) and moving away from the implementation and strengthening of Section 3(d) need to be opposed. The focus of the public sector with regard to the implementation of IPR regime should be looked into from the standpoint of where the innovation policy needs to redirect the efforts in public interest.

As far as the impact of pro-TRIPS domestic innovation policy on the contribution of domestic firms to pharmaceutical innovation is concerned, it is necessary to point out that evidence is building up to contradict the claim that the adverse effect on prices of patented medicines would be adequately compensated by the diffusion of new technological capabilities and advanced pharmaceutical knowledge². Apparently, the activity of mergers and acquisitions prompted the Department of Industrial Promotion and Policy (DIPP) to express concern with regard to access to medicines in the paper issued on November 30, 2011. Control of the home market was recognised by the DIPP to be gradually moving away from the hands of domestic firms. Foreign firms are better placed to use the Indian production base, charging higher prices for medicines because of their growing market power (Chaudhuri, 2010).

Policymakers will have to try getting the domestic firms to concentrate their efforts on the real needs based innovations and strategies that will largely free the Indian firms from getting into dependent relationships with foreign firms. Experience of the worldwide practice of negative innovation emanating from the pharmaceutical sector under the strategy of “innovation for profit,” the Indian policymakers have a social responsibility to ensure that the institutions of health sciences remain geared to producing more of public goods rather than market goods. In particular, they have a duty to use the instruments of public sector R&D and governmental support for innovation to the private sector in a targeted way.

In order to accelerate the processes of knowledge creation for the benefit of acceleration of the catching-up process, the Indian pharmaceutical industry is shown to be in the urgent need of

creating complementarities and linkages to establish the new pathways of growth with a view to impact the processes of learning, competence building and innovation making for the improvement of public health in India. Steps that are considered necessary to bring about a radical change in the impact of active policies under implementation are identified as challenges facing the policymakers in respect of the tasks of domestic market building, dealing with information externalities arising out of weak institutional research base, and remedying the coordination failure and various other such problems of promotion and regulation of technology development.

Notes

¹ Some scholars explicitly expressed that 'neither trade liberalization nor TRIPs requirements are likely to suppress the spread of research and innovation and of generics production, which are a result of knowledge distribution and spillovers as well as property rights protection. Learning by doing is a self-sustaining process that leads naturally not only in imitative and generic production in pharmaceuticals, but also in innovation, for which incentives build up. Even limited R&D and pharmaceutical production, as taking place now through the expansion of pharmaceutical production and sales in transition and emerging economies, is knowledge intensive and has some impact. The multi-layered impact of cooperation will make it possible for these economies to access learning. Both, generics as well as patented products tap into learning, and they are both increasingly responsible for expanding markets in the pharmaceutical sector' (Granville and Leonard, 2003).

² See Abrol (2004), Chaudhuri (2005), and Dhar and Gopakumar (2006).

³ A company can reduce some of the uncertainties of new drug research though this may not produce a drug as big as a blockbuster.

⁴ When it comes to manufacturing, India ranks only second to the US in the number of global Drug Master Filings (DMF) every year. DMF is essentially permission to enter the US bulk actives market with the objective of either supplying to a large US generics player or captive consumption. DMFs by Indian companies rose to 19 percent of the world filings in 2003 compared to 2.4 percent in 1991. For the April-June Quarter 2003, India accounted for 34 percent of the world's filings.

⁵ Recently Chaudhuri (2010) explored the issue of policy options in light of the experience of the Indian private sector and the public-private partnerships initiated in India for the development of new drugs and suggested the expansion of public-private partnerships to include organisations from other innovative developing countries such as Brazil and China.

⁶ Recently, this apprehension was confirmed by the official paper of Department of Industrial Promotion and Policy (DIPP) of Government of India (DIPP, 2011). The paper has attempted to bring issues concerning the regulation of foreign direct investment (FDI) and the use of provisions

of compulsory licensing to deal with the policy challenge once again on the agenda of the Government of India.

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‘New Issues’ in Innovation and Trade: A Study with Reference to Information Economy in India

Rajesh Many*

Abstract

In an information economy, ‘information’ is the major commodity, and ICT facilitates generation and transaction of this ‘information’. Production of ‘information’ is a cost-intensive process in the developing nations like India due to the higher level transaction cost. If we consider ‘information’ as a commodity, the ‘information’ produced within the geographical territory of a nation can be considered as a commodity of that nation, and any kind of profit generation or economic activity based on that commodity would come under the purview of trade rules. The present world trading system and trade policies in the peripheral region ignore these factors due to a prevailing ambiguity in the conventional wisdom of international trade. For instance, ‘user generated information’ dependent companies from the U.S grow at a very fast pace as compared to conventional technology intensive companies due to some kind of vagueness, they create in the global economic structure (ex: Google, Facebook, LinkedIn etc.). All these companies generate their basic commodity, ‘information’, from the general public beyond the national territory where they are headquartered and accumulates huge profits from peripheral regions by enabling the multilateral trade of ‘information’ generated within the national boundaries of peripheral economies. This systemic error would lead emerging economies in the world to under development even if it has potential to grow like core economies in the world system. Therefore, emerging market economies in the world should adopt appropriate policy measures to raise these issues in the venues of national and international trade policy formulating bodies and forums. The present study argues that ‘information’ is the key factor of production in an information economy and the production of such information is a knowledge and cost-intensive activity.

Key Words : ICT, Information Economy, Social Media, Innovation, User Generated Information

1. INTRODUCTION

‘Innovation’ is one of the most cited buzz words in academia, and is considered as one of the key characteristics of economic development in emerging economies, like India. In this study, we observe that the immediate outcome of capitalist innovation and its rapid pace of diffusion in emerging economies would generate an economic disorder within the structure of peripheral economies by favoring the growth of core economies in the world system. The neo-Marxist

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development perspective of the world system theory (Wallerstein 1974) explains the factors behind the prevailing underdevelopment in poor nations, even if they have the capability and resources to grow like capitalist nations in the world; and how the rich capitalist nations in the world push developing nations into the periphery of the world economy. Modern world system theory analyses the world economy in a systemic framework of a multicultural territorial division of labor in which the production and exchange of basic goods and raw materials is necessary for the everyday life of its inhabitants. This division of labor refers to the forces and relations that lead to the emergence of two interdependent regions - core and periphery. Technologically developed capitalist nations are the core, with the less developed nations position at the periphery. Core and periphery nations are geographically and culturally different, one focusing on labor intensive production, and the other on capital intensive production (Goldfrank 2000). Furthermore, the structure of the current world system is a power hierarchy between core and periphery in which powerful and wealthy capitalist nations dominate and exploit poor peripheral nations. Technology is a central factor in the positioning of a region in the core or the periphery. In general, capitalist economies are the major source of commercial innovations, and they have advanced market mechanisms to diffuse their innovations in emerging market economies within the vagueness of the prevailing framework of globalization.

Joseph Schumpeter, the father of innovation, pointed out that 'the capitalist economy incessantly undergoes a mutation that revolutionizes the economic structure from within and incessantly destroying the old one for creating new ones'. As part of this creative destruction process, certain ambiguities emerge within and outside of capitalist economies, but the outcome within the boundaries of core economies would be always favorable to them. Capitalist innovations are not confined to the consumption of capitalist nations alone due to the principle of economies of scale that affect the profit maximization mode. In international trade perspectives, as part of this 'creative destruction' process, capitalist economies incessantly generate certain systemic chaos in emerging market economies to maximize their profit accumulation in the short-run. This system disorder would be retained in the peripheral economies of the world system until the next cycle of their creative destruction. This causes a permanent fatal error in the innovation systems of emerging economies and imposes cyclical barriers to mutate their economies through the creative destruction process. In other words, technological innovations which originate from the core economies would also diffuse certain radical changes in the conventional structure of the peripheral economies. The present study tries to test aforementioned assumptions in the context of the emergence of social media driven governance and cultural revolutions in India within the paradigm of an information economy.

2. CONSTITUTION OF INFORMATION ECONOMY

India is currently undergoing a major socioeconomic transmutation in terms of information technology (IT) and its byproducts. Obviously, information technology was a capitalist innovation, which was invented the core nations and spread over the periphery of the world system sidelining all socioeconomic distinctions. It was a wonderful capitalist innovation in the history of innovation,

and has the capability of rapid diffusion in the world within a short span of time. The components of IT, especially the Internet, enabled a replication of real world situations in the virtual world, and reproduced the behavioral patterns of humans online. It revolutionized the lives and social concepts of the people. Capitalist internet products like Google, Facebook, Twitter, LinkedIn, YouTube, etc. have made a radical reformation in the behavioral and ideological configuration of the general public, especially the lives of people in peripheral economies like India. India is now one of the most valuable market economies for capitalist innovations. In contemporary India, internet-based social tools play a major role in the everyday activities of all factions of people in the society. Social media currently functions as a lobbying space for different interest groups and enables a digital platform for various productive and non-productive public discourses. The State also formulates various policy measures to utilize the power of social media in governance. In short, conventional offline (real world) democratic interactions have now been replaced by capitalist digital social spaces!

According to the U.S Department of Commerce, an information economy is determined by information activity. Information activity includes all resources consumed in producing, processing and distributing information about goods and services. As per their definition, information activity divided into two major sectors: one in the primary information sector where information is exchanged as a commodity, and the other in the secondary information sector where information is embedded in some other product or service and is not explicitly exchanged. In emerging economies like India, social media constitutes an information economy, which consists of the structure of primary and secondary information markets.

The information is data that have been organized and communicated. To organize data into information, one needs to superimpose the order - a system of logic, a system of thought, a system of measurement, and a system of communication (Porat 1977). To communicate these organized data, one requires three more elements: a communicator, a channel of communication, and a receiver. These processes reveal that the production of information is knowledge, cost, and labor intensive activity. Therefore, an information economy is also known as a knowledge-based economy, where knowledge is the key factor of production, sidelining both capital and labor (Drucker 1993). In this definitional framework, the communicator and the receiver function as 'information workers' who produce information, and the internet technology functions as a channel of communication to connect information workers. In the case of social media, the general public around the world (users) function as information workers, and the social media platforms enable a communication medium based on the general purpose technology ICT. In this system, the knowledge and labor intensive part of the information generation is done by the users voluntarily, and such unpaid information workers are spread over the world system. It revolutionizes the conventional principles of 'factors of production' in economics.

3. MONOPOLY ON INDIAN INFORMATION ECONOMY

Currently, India has become a monopolistic market for the U.S based social websites and smartphone based apps like Google, Facebook, YouTube, Twitter, LinkedIn, Yahoo, Quora, Instagram, WhatsApp, etc. However, the situation is different in the case of other emerging market economies like China, Japan, Russia, South Korea, etc. as they have their own homegrown technological concepts to substitute the capitalist ideas. In India, we can observe an imbalance between human resource creation in IT sector and innovation in homegrown digital information tools. India is one of the major countries contributing IT-based talents to capitalist information companies. However, India does not have any homegrown innovative concepts like capitalistic social media products, to date.

The Indian government is a good user and promoter of capitalist social media products, yet fails to understand the economics behind this information trade, and does not insist on the need for home grown technological concepts to resist the monopolistic market power of capitalistic ideas. Why does India not have homegrown information products like Facebook, Twitter, WhatsApp, LinkedIn and Google? Why do capitalist information products have a monopolistic market power one of the world's biggest market economies, like India? In our point of view, it is because social media is not as social as its name indicates, and social websites function as money making machines for capitalist information companies by exploring the vagueness of the global trading environment of the world system. Capitalistic information tools also function as a super-government mechanism for diffusing capitalist ideologies and political moralities in the peripheral economies of the world system.

Table1. Top 5 Capitalist Internet information tools which constitute an information economy in India

| Particulars | Name of Information Tool | | | | |
|-------------------------------|--------------------------------|---------------|----------------|-----------------------|----------------|
| | Google | YouTube | Facebook | LinkedIn | Twitter |
| Service Description | Content Aggregation and Search | Video Sharing | Connect people | Connect professionals | Micro-blogging |
| Headquarters | U.S | U.S | U.S | U.S | U.S |
| Information Production Method | User | User | User | User | User |
| Traffic Rank in India | 1 | 2 | 6 | 10 | 31 |

| | | | | | |
|--|-------|------|-------|--------|------|
| Average Time on Site (Minutes/visit) | 9 | 9 | 15 | 7 | 7 |
| Estimated Percent of Visits from India | 7 | 9 | 4 | 7 | 6 |
| Estimated no. of Visits from India (in millions) | 2180 | 1890 | 990 | 70 | 190 |
| Market Value (in billion USD) | 567 | * | 387 | 26 | 12 |
| Share Value in the NASDAQ (US\$) | 840 | * | 134 | 225^ | 17 |
| Full-Time Employees | 72053 | * | 17048 | 9,372^ | 3500 |
| Note: YouTube comes under the financials of Google; ^ Data based on December 31, 2015. LinkedIn was acquired by Microsoft for US\$ 26 billion in June 13, 2016 and delisted from the stock exchange. Source: (i) publicly available data aggregated from the financial documents of the concerned companies; (ii) Web analytical companies – Alexa.com, Similarweb.com; (iii) Financial analytical companies – Yahoo Finance, NASDAQ.com | | | | | |

In the modern information economy, capitalist innovations creatively bypass the prevailing rules and regulations of the global trading system, and impose a structural anarchy in the trading principles of peripheral economies. In this process, peripheral economies like India struggle to explore the economic advantage of such capitalist innovations due to the systemic failure of their innovations. We try to exemplify such facts empirically by explaining certain economic factors behind the highly diffused five capitalist internet information products in India (Table 1).

4. ECONOMICS OF CAPITALIST INFORMATION TOOLS

The market value of Facebook was US\$ 387 billion, and the average stock price was US\$ 134 in 2016. It has a total of 17,048 employees worldwide. The market value of Google was US\$ 567 billion, and its average stock price was US\$ 840. It has 72,053 employees worldwide. The market value of Twitter was US\$ 12 billion and the stock price was US\$ 17. Twitter has 3,500 employees globally. LinkedIn was acquired by Microsoft for US\$ 26 billion in 2016, and as of December 31, 2015, the share value of LinkedIn was US\$ 225, with 9,372 employees. The combined market value of all these companies is US\$ 992 billion, around 47% of the Indian GDP. This indicates that the market value of the top five capitalist information companies with monopolistic market power in India is almost half of the Indian GDP!

Now, let us analyze the major businesses of these wealthy internet information products. According to stock market classification, these capitalist companies are listed under the industry category - internet information providers, meaning that the main product of the companies is 'information'. Who produces this information? In total, these multinational companies together have only 101,973 employees worldwide. Is it possible to produce such a huge volume of information using these employees? No, it is not at all possible, and they do not have internal economic resources to produce such vast amounts of information. Then who produces these information assets for these companies? The answer is the well-known fact that the raw material (information) for internet information companies is produced by the general public from all over the world. It reveals the fact that the 'general public' is the real laborer of Google, Facebook, Twitter and LinkedIn. It disrupts conventional economic theories on labor and production in the sense that all Indians who use these information tools are unpaid information workers of capitalist information companies. Therefore, we would like to conceptualize the business paradigm of these information companies as a 'capitalist mode of social entrepreneurship'.

5. USER FED INFORMATION MULTINATIONALS AND ECONOMIC IMPACT

For analytical purposes, we classify the above companies under the category of 'user fed information multinationals (UFIM)' because users produce the core product 'information' for these businesses. Principally, new generation capitalist information companies do not have any internal mechanism to produce information; instead, they depend upon the content generated by the public domain. They provide only an ICT based platform to aggregate and disseminate information which is generated by the general public, business entities, and public and private institutions.

The core technology of Google provides an online platform to search and find particular keyword based information generated by third party content generators. Google neither produces nor sells its own information. In that sense, functionally Google does not have any products or services apart from its search algorithm as Google functions as a robotic agent to link information seekers and information producers. The same principle is applicable to its entire subsidiary initiatives like YouTube, Google images, Google news, Google books, etc.

The world's popular social networking tools like Facebook, LinkedIn and Twitter also work under the same principle, except there are a few differences in their content aggregation method. Search engines aggregate and index information robotically, but social websites accrue information directly from their users without any technological complexity. Therefore, technology intensity in social media is less than compared to search engines like Google. In other words, creating a Facebook-like social information tool does not involve many complex technological procedures. Furthermore, one of the economic peculiarities of the information economy is, once the information is produced, the cost of producing one more unit of the same time is minimal, almost zero. Therefore, the profit accumulation of modern digital companies progresses at a rapid pace as compared to conventional brick-and-mortar businesses.

Information generation is a knowledge and cost-intensive process. In an information economy, the major cost involves the content production level. It consists of various cost factors like time, labor, infrastructure, learning, etc. The participation cost (transaction cost) for users to take part in this content production is significantly higher in emerging economies like India. Leading UFIMs like Google, Facebook, Twitter, and LinkedIn, generate huge profits in the short-run because they do not involve information production as they get it freely from users. Here, the production cost of such information is incurred by the users themselves, and the UFIMs crowdsource huge amounts information through their information tools which work on internet protocol standards.

From an economic perspective, the stock value of UFIMs is determined by their user-base and the volume of user-generated information (UGI) stock. The user-base and the UGI have a significant correlation with the market value of UFIMs. A reduction in the user base and UGI may significantly affect the stock prices of UFIMs. To avoid such market risks, various 'happenings' which stimulate the information production activities are very important for UFIMs to protect their market value. In short, 'events' which lead to mass information production are a strategy for UFIMs to increase the value of their stocks. In general, due to the lack of innovation capability and a policy framing mechanism towards the capitalistic creative destruction process, peripheral economies like India fail to recognize the economic logistics of the multilateral trade of UGI and its impact on the economy.

Now, let us look into the economic impact of UFIMs in India. Firstly, let us consider the participation cost for accessing these information tools in India. For this exposition, I consider two UFIMs - Facebook and YouTube. Both of these companies are UGI dependent and highly diffused in India. The video sharing tool YouTube is the second largest diffused social tool in India after its parent company Google. The social networking tool Facebook is positioned in the 6th rank in terms of traffic generation from India.

As of February 2016, Facebook generated 25¹ billion visits per month globally. The average visit duration on Facebook was 15 minutes. According to the official statistics of Facebook in 2016, 87% of monthly active users of Facebook are from outside the US and Canada. As per the Facebook annual report 2015, accessing Facebook on personal computers shows a declining trend due to the higher level penetration of mobile phones among users in emerging economies. In developing nations like India, Facebook is one of the most used apps on mobile phones. The increased rate of diffusion of mobile phones and the growth in Facebook users in peripheral economies like India is significantly correlated. The Facebook annual report observes that users in India, Brazil, and the United States were the key sources to record their user-base growth in terms of users. After the U.S, India is the one of the key traffic generating geographical locations for the Facebook. In India, Facebook generated an estimated average monthly visit of one billion in 2016. According to our data mining and estimation, an average 3 MB bandwidth of data was consumed per user for each Facebook visit. In India, the estimated cost of one MB bandwidth data is 0.2 rupees. According to statistics, estimates reveal that approximately Rupees 60 crores per month is

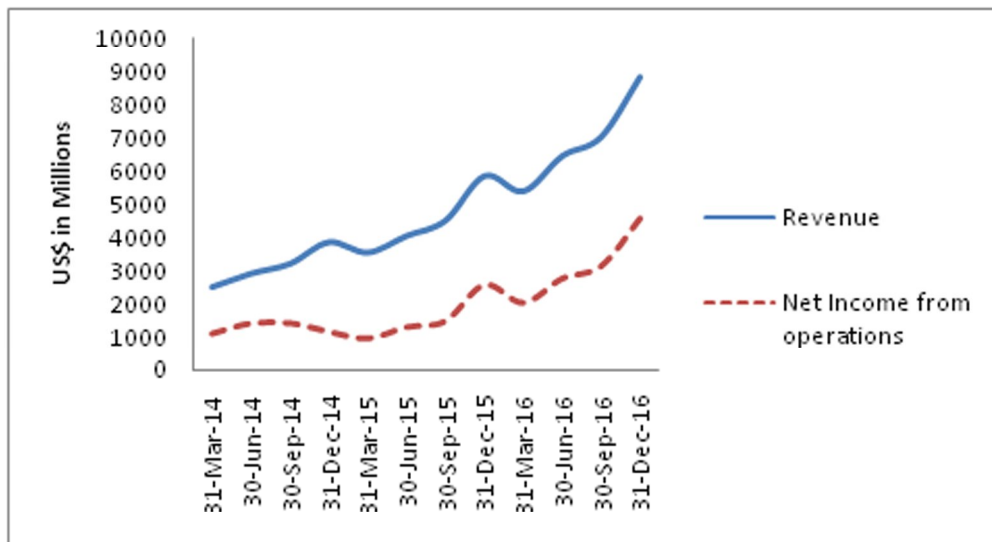
spent in India for accessing Facebook. In annual terms, people spend Rupees 720 crores as the participation cost for accessing the Facebook platform. If we compute other cost parameters like time, infrastructure, learning, etc. the volume of spending would be significantly higher.

The UGI based video sharing tool YouTube is a subsidiary product of the search engine tool Google. Google is the most visited UFIM in India. The second position goes to YouTube. It generates on average 22 billion visits per month in 2016, and on average 9% of traffic from India comes from around 2 billion visits per month. YouTube as a video sharing and viewing tool consumes a high rate of data volume. Technically, YouTube broadcasts different types of resolutions of videos to improve the quality of videos and the user experience. Therefore, the rate of data consumption on YouTube is basically determined by the quality of videos users upload and watch. According to our estimates, watching a medium quality video with a resolution below 720p would consume at least 3 MB data for 1 minute duration. In India, the average time spent on YouTube is 9 minutes per visit. As per this estimates, approximately Rupees 1080 crores per month and Rupees 12,960 crores per annum is spent for accessing YouTube in India.

The estimated statistics of the above two UFIMs establish how much money is involved in the UGI trade and how it impacts the Indian economy. If we calculate the activities of all UFIMs in India, the emerging economic dimensions would be exceptionally complex. It reveals how the innovations of capitalist UFIMs utilize the internal socio-economic resources of peripheral economies to accumulate profits distantly by exploring the prevailing ambiguity in the innovation systems of peripheral economies and in the global trading system. However, we cannot disregard the fact that, in terms of participation costs, Indian internet service providers and ICT hardware sellers also benefit partly, but it is insignificant if we consider the overall economic impact on the economy.

To understand the volume of revenue accumulation of UFIMs from India, we exclude YouTube from the present analysis due to discrepancies in the data available from Google's annual reports separately for YouTube. According to Facebook official statistics, the total revenue generated in 2016 was US\$ 27,638 million, and the net income after the total costs and expenses was US\$ 12,427 million. The chunk of its revenue is generated from its globally broadcasted advertisements, and it constitutes around 97% of the total income generated in 2016. The quarterly records of total revenue and net operating income after all costs and expenditure show an upward trend since 2014, and the gap between total revenue and net income narrowed due to cost efficiency (Figure 1).

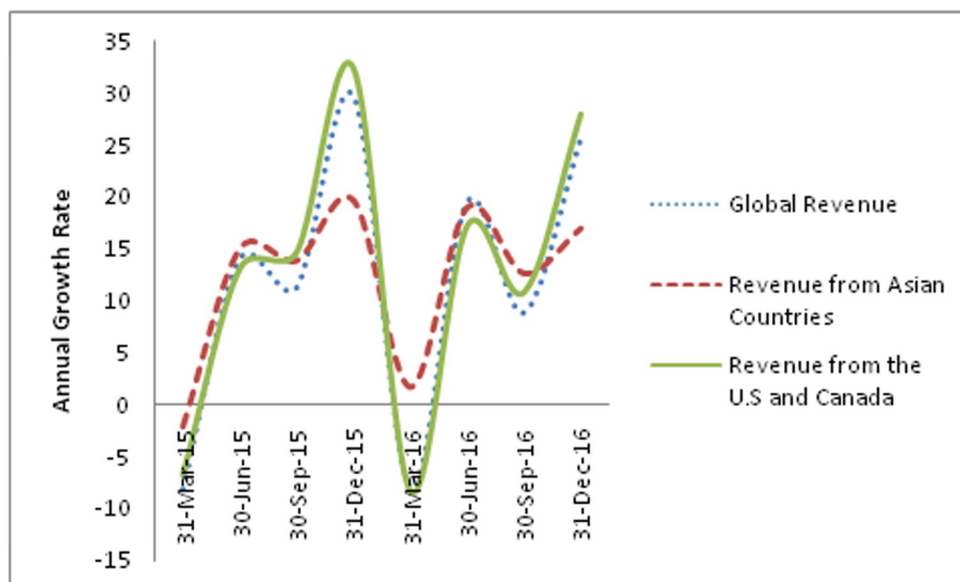
Figure 1. Total Revenue and Net Income from the Operations of Facebook



Source: Annual Financial Reports of Facebook (2014-2016)

The average annual growth rate of Facebook revenue since the last quarter of 2014 is 13% globally and 12% in Asian countries. However, the trend in the growth rate is highly volatile. This is mainly due to the immediate fall and rise in user engagements on the Facebook platform in tune with various events which accelerate and decelerate UGI production and its distribution. In other words, time sensitive events and happenings may fire up the productions of UGI that would accelerate income generation through a large volume of advertisement distribution worldwide. For example, a controversial statement of the American president Donald Trump on his immigration policy may stimulate user interaction and UGI production on Facebook all over the world, and its externality would positively reflect on the ad revenues of Facebook. The highest level of volatility in the growth rate of Facebook revenue would not be an indicator of the uncertainty in its business; instead, it indicates the UGI production capability of various events in the world and its relation to revenue generation. Events and happenings are the major stimulating factors which determine the business of UFIMs. Figure 2 clearly shows the fact that as compared to global and U.S revenues, the revenue growth instability is relatively lower in the Asian region. In Asia, India is the major traffic generating geographical location for the Facebook.

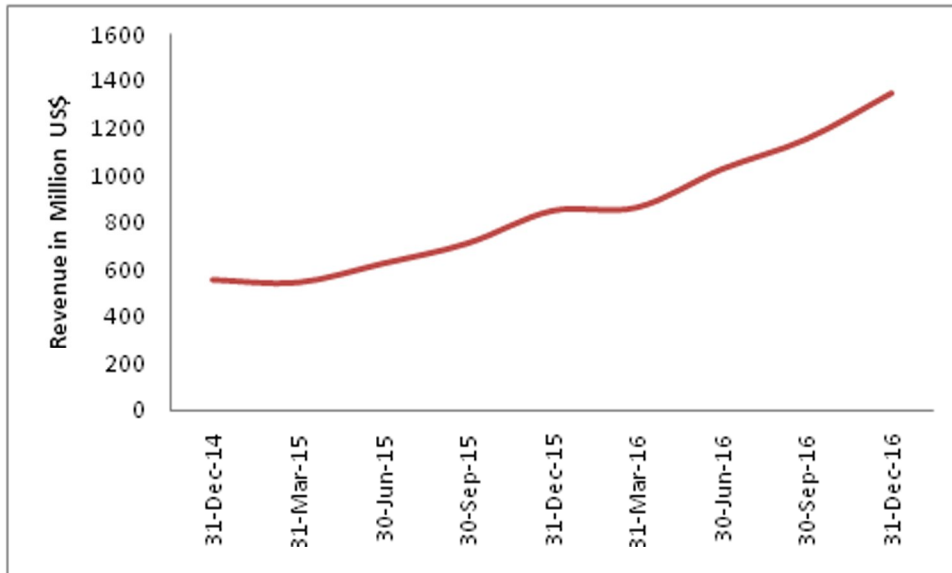
Figure 2. Quarterly Growth Rate of Facebook Revenue



Source: Annual Financial Reports of Facebook (2015-2016)

According to Facebook official statistics, 16% of the total revenue was contributed by Asian countries in 2016, and the average revenue per user was US\$ 2. Facebook has earned US\$ 4390 million from the Asian region in 2016. In the Asian region, India was the most income generating market geographies for Facebook, and India had 195 million active users in 2016¹. According to these statistics, Facebook generated an estimated amount of US\$ 390 million from the Indian market in 2016. In Indian currency, that comes in around Rupees 2,574 crores². It is interesting to observe how capitalist ideas accumulate profits from the social and economic resources of peripheral economies by creating technological ambiguity. In this case, the world's largest democracy, India, has spent Rupees 720 crores in participation costs to generate Rupees 2,574 crores in profit for Facebook in 2016!

Figure 3. Quarterly Revenue from Asian Countries (in Million US\$)

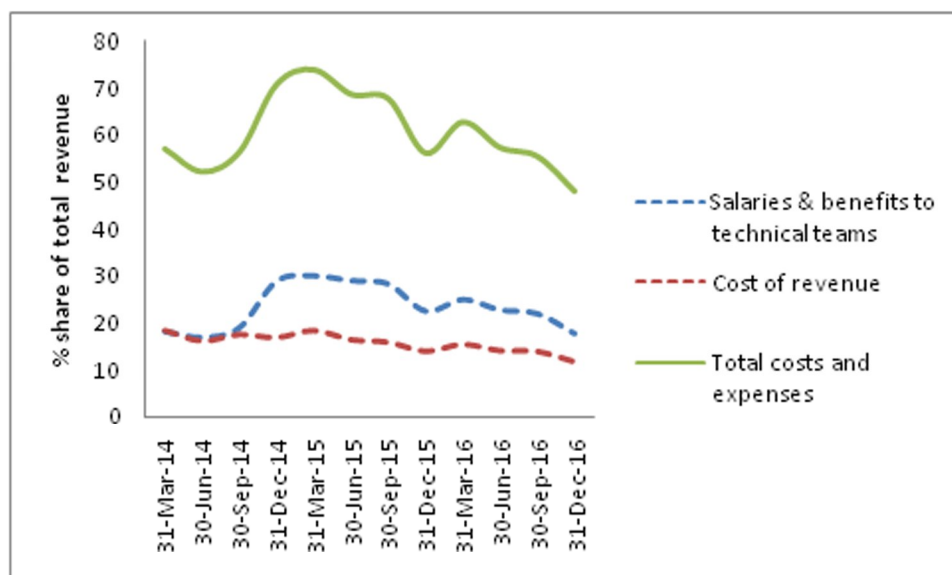


Source: Annual Financial Reports of Facebook (2014-2016)

On the expenditure side, Facebook reports mainly four costs - cost of revenue, research and development, marketing and sales, and general administrative costs. Among these costs, the cost of revenue and research and development are the major costs. The cost of revenue consists of expenses associated with the delivery and distribution of Facebook products, which includes expenses related to the operation of data centers, server equipment depreciation, energy and bandwidth costs, etc. It is mainly an infrastructure operational cost, and this cost is mainly spent in the U.S. The research and development expenses consist of salaries and benefits for engineering and technical teams who are responsible for building new products and improving existing products.

The percent share of total costs and expenses to total revenue was 55% in 2016. The cost of revenue was 14% and the research and development expense was 21%. The costs of revenue and research and development expenses constitute 35% of the total revenue. The pattern of percent share of the major costs to total revenue shows a downward trend (Figure 4). However, this cost reduction and the increased profit share cannot be attributed to the conventional wisdom of the economies of scale principle as Facebook is not producing anything apart from its basic technological platform and minor incremental innovations; instead, it is due to the higher level of unpaid UGI production from all over the world on the Facebook platform.

Figure 4. Percent Share of Costs and Expenses to Total Revenue



Source: Annual Financial Reports of Facebook (2014-2016)

6. CONCLUSIONS

In an information economy, 'information' is exchanged explicitly as a commodity or the 'information' is embedded in some product good or service. Information as a commodity in an information economy has all properties of other economic goods that are traded in the framework of the conventional world trading system. This study argues that if a piece of information is produced within the boundaries of a nation using its own resources, it would be considered as the product of that nation and any kind of cross national profit generation based on that particular piece of information should come under the purview of the rules and regulations of international trade. However, current global trading policies disregard this fact due to the prevailing structural disorder in the economies of peripheral regions in the world system. This structural disorder is exogenously generated and rooted from the core nations as an outcome of capitalistic innovations and its higher level diffusion in the peripheral economies. For instance, the rapid pace of the diffusion of capitalist internet information tools in emerging information economies like India creates an economic vagueness in their innovation systems, and implicitly contributes economic underdevelopment in peripheral economies.

The ‘crowdsourcing’ systems of information and knowledge which are invented by capitalist innovators diffuse the socioeconomic chaos in the region of peripheral economies and reaffirm the emergence of a new regime of the world system. In other words, ‘information’ is the key factor of production in an information economy and the production of such information is a knowledge and cost-intensive activity. The present world trading system and trade policies in the peripheral region ignores these factors due to a prevailing ambiguity in the conventional wisdom of international trade. For instance, information economy-driven capitalist innovations like Facebook, Google, YouTube, Twitter, LinkedIn, etc. accumulates huge profits from peripheral regions by enabling the multilateral trade of ‘information’ which generated within the national boundaries of peripheral economies using their own economic resources. This systemic error leads emerging economies like India to underdevelopment. Emerging market economies in the world should adopt appropriate policy measures to raise these issues in the venues of trade policy formulating bodies and forums.

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Post-Arafat Palestinian Politics and the United States: An Indian Perspective

Prasad M.V.*

Abstract

Palestinian leader Yasser Arafat was the champion of Palestinian nationalism and embodiment of their movement against imperialism, colonialism and freedom from Israeli occupation. His death was an end of a long involvement of political struggle against Israel and its close ally US. Departure of Arafat from Palestinian political scene happened during a critical phase of Palestine-US relations and Palestinians themselves. The reaction of the international community, as expected, to Arafat's death was mixed. This paper discusses developments from the end of Arafat era to the democratic elections to the new Palestinian president and its impact on the Palestine -US relations.

Key Words : Post-Arafat Palestine, US Foreign Policy, Indian Foreign Policy

1. INTRODUCTION

On 11 November 2004, veteran Palestinian leader Yasser Arafat died in a military hospital at Paris, the French capital. He was seventy-five, and succumbed to an unidentified illness and the effects of the Israeli siege. His death was the end of a long involvement in political struggle against Israel and its close ally, the US. He was the champion of Palestinian nationalism and the embodiment of their movement against imperialism, colonialism and towards freedom from Israeli occupation.

Arafat had a revolutionary vision in the pre-globalization period; he also shared a vision of Arab unity and peace and peaceful coexistence of all states in the region irrespective of their political system. The speaker of the Palestinian Legislative Assembly, Rawhi Fattuh, took over as interim President of the Palestinians, ahead of fresh elections on 9 January 2005. Former Prime Minister Mahmoud Abbas was chosen as the Chairman of PLO's Executive Committee. Prime Minister Ahmed Qurei retained his post, and Foreign Minister Farouk Kaddoumi was named as head of Fatah, the dominant faction within the PLO. The reaction of the international community, as expected, to Arafat's death was mixed. Many noted his role as the symbol of Palestinian national aspirations of the people, but expressed regret at his failure to secure peace with Israel and to halt the violence of recent years. Expressing his condolences for the Palestinian people, President George Bush said that Arafat's death marked a "significant moment" in Palestinian history and that he hoped the future would bring peace, fulfilling aspirations for an independent

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democratic Palestine that is at peace with its neighbours. British Prime Minister Tony Blair, who urged President Bush to launch the Road Map, highlighted Arafat's role in leading the Palestinians to "a historic acceptance of the need for a two-state solution", adding that peace in the West Asian region "must be the international community's highest priority" and that "the goal of a viable Palestinian state alongside a secure Israel is one that we must continue to work tirelessly to achieve." (Youngs 2005: 44-45).

The PLO leader's death occurred after eleven months of deteriorating health. It is noted here that he was under Israeli siege when his untimely death happened. His confinement at Ramallah, PA's *de facto* headquarters caused him deep psychological pressure, coupled with political isolation and US pressure to unilaterally implement the Road Map formula (UN 2008: 49-50). The departure of Arafat from the Palestinian political scene happened during a critical phase of Palestine-US relations, as well as internally for the Palestinians. The event occurred in the backdrop of failed Camp David-II talks, immediate outbreak of the second *intifada* against Israeli occupation, the ascendancy of people in power like Ariel Sharon in Israel and President Bush in the US, the unexpected turn of world politics due to September 11 and the US 'war on terror', the US invasion of Iraq and the launching of "so called" Road Map for peace (Pradhan 2008: 295) in West Asia. Israel started to build a separation wall to capture more Palestinian areas by implementing a highly provocative policy of 'security for Israelis'.

The Palestine-US relation in the post-Arafat era was marked by a series of developments. Bush started his second term with a new team of foreign policy experts and a cabinet with more hawkish people; the Palestinian Authority (PA) conducted elections for its highest post in January 2005, besides the presidential elections and most controversial and critical 2006 PA-Legislative Council elections; Hamas emerged as the dominant actor in Palestinian politics; and finally, the US convened the Annapolis conference. This paper discusses developments from the end of the Arafat era to the democratic elections to the new Palestinian presidency and its impact on the Palestine-US relations.

2. POST-ARAFAT PALESTINIAN POLITICS

"From the 1960s through 2004, Arafat dominated the leadership of both the Fateh movement and the PLO and its various institutions. His power is spread across the areas of political, financial, and public relations, and organizational domains". He played a significant role in his long association with the Palestinian issue and brought back the fundamental problem as a political issue rather than a refugee problem, as characterized by the US and her major allies for many decades. He led the movement for "the last forty years of his life" in a unique way that got both large support and criticism about his leadership. "Arafat was the only figure with the power to unite, make decisions on behalf of, and lead the Palestinians to the degree that the evolution of the Palestinian problem can be said to have been an expression of Arafat's mode of decision making and his life a direct

continuation of the decisions he took in the name of his people". Arafat "alone possessed the capacity to bring the aspirations of the Palestinian people to fruition" (Ghanem 2010: 71-72).

Arafat dominated Palestinian politics and held several posts during his long association with the Palestinian movement. Arafat was the chairman of the Executive Committee of PLO, the "Ra'ees," or president, of the Palestinian Authority (PA), the head of the Central Committee of Fatah (Robinson 2000: 78), the commander in-chief-of the Palestinian armed forces, head of the national security council of PA, and PA interior minister (Document and Source Material A2, :165). He "symbolized the Palestinian struggle for an independent state more than any other leader in the Palestinian history" (Pradhan 2008: 296). However, his intense desire to live in a liberated Palestinian territory ended up as an unfinished dream, and his promise to his compatriots of leading a life with freedom, dignity, democracy and peace too became a distant reality. In one of his last interviews, he summarized his contributions to the Palestinian cause and the fundamental problem with the movement. He concluded that under his leadership: "we made the Palestinian case the biggest problem in the world107 years after [founding 1897 Zionist] Basel Conference...Israel has failed to wipe us out. We are here in Palestine, facing them. We are not red Indians". He further argued that the only obstacle to establishing an independent state in Palestine is "Israeli and American hostility" towards the Palestinian nationalism (Document and Source Material A2: 165). His comparison that "we are not red Indians" is a clear reference to the US. And of course he wished to raise a moral as well as political question on the US' support to Israel and its consequences to Palestinian nationalism. The only achievement in his lifetime, according to a view that is very critical within and outside of Palestinian society, is the establishment of the PA as an interim measure with US mediation, which ultimately did not guarantee the establishment of a Palestinian state. His expectations of the US did not provide any political dividend by way of building a Palestinian state in the occupied territory.

President Bush on Arafat's legacy

The divide between Arafat and President Bush was visible from the condolence message of the US Secretary of State Colin Powell. The latter expressed his "deepest sympathies and support to the Palestinian people at this time of grief and sorrow. Our condolences go out to the family of Yasser Arafat". His remarks might suffice as to the personal respect furnished upon the death of a Head of State. However, the most striking aspects are about the evaluation of Arafat as political "figure" and his principles. "Yasser Arafat was a significant figure in the history of the region and the world". Secretary Powell, significantly, left out his role as a Palestinian leader who sacrificed his entire life for a single purpose - Palestinian liberation - which the US fit into their objectives. However, according to the US, only in the eyes of the Palestinians - not in the eyes of a number of states and thousands of supporters across the globe- "Arafat embodied their hopes and dreams for the achievement of an independent Palestinian State". At the same time the US laid more stress on his death as an opportunity to remind the Palestinians about the urgency to implement the US plan for peace. President Bush had very little respect for the PA president. He

said “Arafat’s death marked a significant moment in Palestinian history and hoped the future would bring peace”. It is evident from the statement of the two US leaders that Arafat was an obstacle to peace in the eyes of US (Youngs: 2005-45; US Department of State 11 November 2004). Interestingly, he was never an obstacle to peace, but an excuse for Israel not to talk to the Palestinians; hence the bogey of terrorism (Pradhan 2008: 303). Secretary Powell had rightly put in what the US and President Bush demanded at this time of grief:

our concern remains for the Palestinian people and the realization of the vision of an independent, democratic, viable Palestinian state, at peace with its neighbors, as set forward by President Bush. We will do all we can to support and help the Palestinian people move forward toward peace during this period of transition, and we encourage others in the region and the international community to do the same. It is our hope that calm will prevail in the region during this period of mourning (US Department of State 2004).

The death of Arafat created a power vacuum in the PA and the PLO. He dominated Palestinian politics for over forty years and “determined that no other Palestinian figure could emerge as a possible alternative for him”. Palestinians feared life without him. It was not an exaggerated view because he “has been an iconic and father figure for the Palestinian people” (Ross 2004). Though there was enough doubt within the western countries about a possible power struggle and internal rivalry to capture power in the post-Arafat era, all of these were proved wrong from the very beginning with the appointment of PLC chairman Rawhi Fattuh as the caretaker President for the 2005 presidential elections. That doesn’t mean that the Palestinians were ready to adjust with the new reality without any apprehension. From the moment he left for France (Paris) for medical treatment, Palestinians expressed their grave concern and the consequence of this occurrence in their political life. Some believed that it was difficult to imagine the future without him and large sections of the Palestinians, roughly 70-80 per cent, had little experience of political life without him. Others expected that Arafat’s departure would herald a new era of reforms by breaking the ‘formaldehyde’ that had long crippled Palestinian politics under his charge: a snarl that was impossible to reform with him’ and yet very difficult to evade without him’ (Pradhan 2008: 339; Usher 2004: 4-5; Youngs 2005: 44-45; Nofal 2006: 23-37). Another major apprehension in the context of his death was the future of the PA. From the Palestinian point of view, the PA was envisioned to transform into a state after a given period of five years, but it became a distant reality during his era even after serious efforts. So, “there was a serious apprehension about the future of the PA in the context of Arafat’s death” (Prasad 2016:161). But the views of the US and Israel completely contradicted this view.

This school of thought largely comprised of people like President Bush, Vice-President Cheney, Foreign Secretary Powell and the US Envoy to Peace Process Dennis Ross, who argued that his death “may create circumstances that make the emergence of a new era possible”. And he further argued that the US must urge the PA to conduct early elections to ensure the emergence

of leaders who are “committed to coexistence” with Israel. To him this situation was the “best chance” for the US to facilitate a change in the PA leadership, because “Arafat is no longer an obstacle to peace” (Ross 2004). The PA presidential elections were held in this kind of environment.

Gaza Withdrawal

“The year 2005 was an eventful year for Palestine not only because of a number of changes in the regional and international scenes that affected the *Intifadah* and the whole Palestinian issue, but also because of some important changes in the internal Palestinian setting” (*The Palestinian Strategic Report*, hereafter *PSR* 2005: 21). The political developments that happened during this year were related to the PA’s presidential elections and Prime Minister Sharon’s unilateral disengagement from the Gaza Strip. These two incidents have remarkable influence in the post-Arafat phase of PA-US relations. The death of Arafat created an “unwonted unity” on Fatah cadres and that unity prevailed on the choice of his successor. According to a Fatah leader, it was the only way to “fill a vacuum that could not be filled” (Usher 2008: 52). So, the first PA presidential election after the demise of Arafat seemingly tested this political unity of Fatah and the Palestinians’ commitment to the new leadership and their capacity to carry forward the legacy of Arafat. Obviously, the best choice was none other than Mahmoud Abbas (Abu Mazan), who was considered the top leader of Fatah after Arafat. His takeover of PLO’s leadership as its chairman, immediately after the death of Arafat, was considered a step in the right direction to assuming the post of PA president. This prediction became reality with the 9 January, 2005 elections.

Presidential Election in Palestine and the US

The elections were held on the basis of Basic Law 2003. “It is clear that: a new president must be chosen by general elections within sixteen days” (Usher 2008: 43). However, there were differences within the PLO to settle the matter of presidential elections. Some on the PLO-EC and Fatah Central Committee (FCC) argued against fresh elections, whereas others came up with the idea of selecting a new president from the existing parliament and not by Palestinian electorate. According to some sources, Abbas himself took this position. But the reformists, who demanded fresh elections based on existing law, succeeded in settling the issue through democratic process. It demonstrated once again the Palestinians’ political capacity to decide the succession of power (Usher 2008: 43; Pradhan 2008). The US position was to conduct fresh elections (Ross 2004). Elections were held on 9 January, 2005 under the Palestinian Basic Law 2003 (Amended) and Palestinian Elections Law 2005, just before the expiration of the stipulated time period of two months. According to Article 37(1) of the Amended Basic Law 2003, “the office of the President shall be considered vacant in any of the following” three cases:

- a. Death;
- b. Resignation submitted to the Palestinian Legislative Council if accepted by two thirds of its Members;
- c. Considered legally incompetent, as per a ruling issued by the Supreme Constitutional Court, and subsequently approved by two thirds of the Palestinian Legislative Council Members (*Amended Basic Law* 2003).

The same Law has clearly stated under Article 37(2) the process to fill the vacancy of the PA President, if it falls vacant on the above three conditions. The present situation was falling within the category of “death” of the incumbent president i.e. President Arafat. The above Article stated that the procedure and process to appoint the new PA president was:

If the office of the President of the National Authority becomes vacant due to any of the above cases, the Speaker of the Palestinian Legislative Council shall temporarily assume the powers and duties of the Presidency of the National Authority, for a period not to exceed (60) sixty days, during which free and direct elections to elect a new president shall take place in accordance with the Palestinian Elections Law ((*Amended Basic Law* 2003; *PA Elections Law* No.9 2005).

The tenure of the President was four years and is eligible to be reelected for one more period. But in any case, more than two is prohibited. There were seven candidates in the fray for the post of PA president and Mahmoud Abbas (Abu Mazen) got a significant majority with 65.52 per cent as Fatah candidate.

| Candidates and Party | Votes (%) | Votes (total) |
|--|---|---------------|
| Mahmoud Abbas Fatah | 65.52 of eligible voters but 62 of those who voted. | 501,448 |
| Mustafa Barghouti Independent | 19.48 | 156,227 |
| Tayseer Khaled DFLP | 3.35 | 26,848 |
| Abd Alhalim Ashqar Independent | 2.76 | 22,171 |
| Basam Al Salhi Palestine People's Party | 2.67 | 21,429 |
| Assayed Barakeh Independent | 1.30 | 10,406 |
| Abd Al-Karim Shbair Independent | 0.71 | 5,717 |

(Source: Palestinian Central Elections Commission in Pina 2006:8)

The election held in comparatively a positive environment for Fatah candidate and PLO Chairman Mahmoud Abbas. During this time, Hamas and other militant groups restrained from any action against Israeli occupation and observed peace. There was only one incident of a Hamas attack during this period. The militant groups, particularly Hamas, decided to boycott the presidential elections that paved the way for the smooth victory of Fatah leader Abbas. His main opponent was human rights activists and former Palestinian Communist Party leader Mustafa Barghouti who secured nearly twenty per cent vote i.e. 19.5 per cent. The election showed good response from voters and the voter turnout was 63 per cent (PSR 2005: 27; Youngs 2006; Uhser 2005: 52; Migdalovitz 2005: 6). Abbas dedicated his victory to the legacy of Arafat and argued that he “planted first seed of this democratic process” in Palestine and promised to continue the peace process (Document Sections, Arab B1: 2005:169).

To monitor the elections, the US sent an “Official U.S. Observer Delegation” to Palestine for the Palestinian Presidential Election scheduled on 9 January, 2005. The delegation was led by Senators John Sununu and Joseph R Biden, Jr. of the U.S. Senate Foreign Relations Committee, and included four Congressional staff members, and prominent Palestinian-Americans George Salem and Ziad Asali. David Pearce, U.S. Consul General, Jerusalem, was also in the observer team. They were satisfied that the election process was “free and fair”. The White House commented that “The Delegation’s visit will demonstrate that the U.S. is fully committed to a free, fair election process that produces a credible result”. The statement further explained the importance of elections for the Bush administrations: “We hope that this cooperation will continue and will lead to further steps towards realization of the President’s vision of two states living side by side in peace and security” (Adam 2005). President Bush welcomed the elections and Palestinians’ support to democracy and Abbas as PA President. He commented that:

“This is a historic day for the Palestinian people and for the people of the Middle East. America and all free nations strongly support the efforts of the Palestinian people to create lasting democratic institutions. These efforts-including today’s presidential elections and the parliamentary elections that will follow in several months - are essential for the establishment of a sovereign, independent, viable, democratic, and peaceful Palestinian state that can live alongside a safe and secure Israel. These elections are further proof that when given a choice, all peoples seek to live in liberty and to choose their own government” (Bush 2005).

Even though President Bush welcomed the elections and the new PA leadership, his vision of the Palestinian state was unclear. He was more concerned about the fight against terrorism and PA’s commitment to cooperating with the US and implementing his agenda of democratic reforms. Meanwhile, the US President had demanded of Israel only help to improve the “humanitarian and economic” situation of Gaza and West Bank. However, the real problem was political, which he did not mention (Adam 2005; Bush 2005). The PA presidential elections and Abbas’ victory was considered a new phase in PA –US relations with the scope of resumption of

peace process and the implementation of the Quartet Road Map. However, President Abbas' initial enthusiasm towards resuming talks with Israel became unrealistic as Prime Minister Sharon suspended official contacts with the Palestinians within a week after Abbas' election as President.

Internal schism and external factors

On January 14, Hamas, Islamic Jihad, al-Aqsa Martyrs' Brigade and the Popular Resistance Committee jointly launched an attack on the Gaza-Israel crossing. Abbas, as the PA president faced first Israeli and US challenge from this incident and deployed Palestinian security forces to Gaza, reaching a one-month cease fire agreement with these radical militant groups. Simultaneously, PA-Israel increased their security cooperation to ensure peace in Palestine (Migdalovitz 2005). On 8 February, 2005 PA and Israel reached a cease-fire agreement at Sharm al-Sheikh. President Abbas and Prime Minister Sharon agreed to stop all violence against each other. PA president stressed the need to make progress on the initial phase of the Roadmap, so as to facilitate the resumption of final status talks. Both parties accepted differences over many issues, which remained unresolved. The PA expressed its concern over the Israeli plan to expand settlement in Jerusalem. Meanwhile, Israel demanded strong action against "terrorist infrastructure" and argued that "only by crushing terror and violence will build peace" (Young's 2005: 46). PA's apprehension over further settlement got surprise attention from President Bush who demanded "Israel must freeze settlement activity" and asked Israel to "help Palestinians build a thriving economy, and ensure that a new Palestinian state is truly viable, with contiguous territory on the West Bank. A state of scattered territories will not work" (Mark 2005: 4). When the PA was engaged to restart the peace process, Palestinian domestic politics was preoccupied with government formation. Palestinians were hopeful about President Abbas' efforts to resume peace talks and stopping corruption in the administration (Palestinian and Survey Research 2005).

The deliberations for the establishment of the first post-Arafat Palestinian government revealed unsettled issues and crisis within Fatah. After being entrusted by President Abbas to form the government in early February 2005, Prime Minister Abu Alaa announced its structure without having won the PLC's vote of confidence, due to internal disagreements within Fatah. Several times the names of ministerial candidates were announced and then withdrawn, and the PLC's vote on the government was postponed more than once. Finally, on February 24, 2005, a government composed of technocrats, who were selected mainly on the basis of their profession and not on their political affiliation, was formed with minister posts. There was only one exception, that of the Minister of Information, Nabil Shaath. "This revealed the lack of willingness among many Fatah members to allow PLC members to hold ministerial portfolios". It was dominated with non-political functionaries and most of them were academics or professional experts. If the selection of the President was easy for Fatah, but cabinet formation became a difficult affair for them, then the absence of Arafat was an important reason for the festering of such a crisis. During his tenure, most of them accepted Arafat's decisions as final without revolt or defiance towards his resolution on these subjects, though this did not come about in an autocratic fashion, despite the criticism of

Arafat's style by many functionaries. Unlike his predecessor, President Abbas did not intervene in the process of cabinet formation. Now, the situation was different and the conflict became an apparent struggle within Fatah's leadership to occupy ministerial posts. "Many observers believed that the upcoming PLC elections would result in the end of Fateh's hegemony over the government". This prediction became a reality in the subsequent PLC elections that will be discussed later (Usher 2005).

Some of the major factions objected to the formation of a government largely chosen from non-political sections included DFLP, which took the position "that establishing an interim coalition government would serve as a means of escaping the crisis, while embarking on a path of democratic reform, to include the amendment of the Electoral Law to create a mixed electoral system combining proportional representation and the constituencies system". They "issued a statement claiming that a technocratic government would be unable to solve the crisis or break the deadlock". Hamas took a strong position against the new government on several grounds (Usher 2005; Ghanem 2010).

The internal differences, as discussed above, within the Palestinian groups were resolved by the mediation of Egypt in March, in talks held between the 15th and 17th of that month. This Cairo meeting resolved to end the differences by inducting other groups into the government. The intra-Palestinian dialogue was not an easy affair. Some small groups tried to demonstrate their role in Palestinian politics while the main issue evolved between Fatah and Hamas. Hamas' objection was mainly focused on a previous issue related to the PA-Israel meeting in February 2005 and subsequent declarations by President Abbas and Prime Minister Sharon. The Palestinian- Israeli declaration had agreed for mutual "cessation of violence", that was considered to be an implementation of the First phase of the US sponsored Roadmap *inter alia*, which stated that:

Palestinian leadership issues unequivocal statement reiterating Israel's right to exist in peace and security and calling for an immediate and unconditional ceasefire to end armed activity and all acts of violence against Israelis anywhere. All official Palestinian institutions end incitement against Israel (UNO: 2003; Special Documents, JPS 2003; 89-90)

Palestinian resistance groups interpreted the phrase "cessation of violence" as virtual ceasefire and raised the criticism that President Abbas had conceded to Israeli demands without consulting other Palestinian forces. However, these Fatah-Hamas differences were sorted at this meeting, which approved a political-economic program for the year 2005. The main resolutions were: i) Palestinian State with Jerusalem as its capital, ii) Right to return of Palestinian Diaspora to their homeland, iii) Palestinians' right to resist the Israeli occupation, iv) A "year truce that is conditional on the cessation of Israeli aggression and their release of all Palestinian prisoners and detainees". Besides these main issues, they also agreed that Israel's continued settlement and building of a separation wall in the West Bank would be a challenge to peace. They also reached

a broad consensus to conduct elections on schedule and to restricting the PLO, to make a more democratic representation of all sections of Palestinian society. The compromise accepted by all the political forces of Palestine was to support President Abbas' plan to resume peace negotiations with Israel and the US to resolve the problem. It was a rare show of unity among secularists, Islamists and militants in the Palestinian movement to achieve their important national goals and internal reform (PSR 2005: 27-28).

Cairo Meeting

The enthusiasm generated from Cairo meeting failed to translate into political reality. The "inherent assumption that Egypt, the patron of Cairo meeting" and President Abbas had secured the support of the US and Israeli commitment to make a positive response to the Cairo decisions of major Palestinian political forces had been proved wrong. Israel continued their targeted assassination policy against the Palestinians and it reached its peak before and after the unilateral Israeli withdrawal from the Gaza Strip. On the Palestinian front there was little progress towards implementing the two key reforms accepted at Cairo. The first one is the formation of a national leadership, at least in the Gaza Strip, to administer after the expected Israeli withdrawal from Gaza Strip. The second issue related to the restructuring of the PLO, with the inclusion of militant groups like Hamas and Islamic Jihad. However, it could not be implemented, due to various differences between Hamas and Fatah. Since the Cairo meeting, Hamas insisted on having a unified leadership in Gaza which would ensure their supremacy. Meanwhile, Fatah and the PA rejected such a demand and pursued the former to accept previous consensus on the "Supervisory National Islamic Committee" agreed upon during the al-Aqsa *Intifada*. As far as the PLO reforms were concerned, President Abbas, as the head of the PLO, convened a PLO-EC meeting on 28 March, 2005 at Gaza. Before the meeting started, there were enough indications about its rigid position on this subject. The meeting with this agenda was attended by Islamic Jihad but Hamas boycotted it by putting the blame on PLO, saying that it was a retreat from Cairo agreement. According to Hamas, the meeting should have been conducted after the inclusion of the two organizations, rather than inviting them to the meeting as non-members, in a betrayal to the Cairo consensus. The meeting did not decide upon the legislative elections. The main reason for the non-inclusion of Hamas and Islamic Jihad to the PLO was primarily due to two reasons. First was that their inclusion would dilute the PLO's position and have repercussions from the US and Israel. The second reason was that there was apparent divide between President Abbas and Faruq Qaddumi, PLO-EC member and Fatah secretary-general. Besides this, the US had been demanding reform of the PA, which was fundamentally against the demands of militant groups. The US demanded strong action against these Palestinian groups and asked the PLO not to give them any role in reforming Palestinian polity (PSR 2005: 29-30).

London meeting

In the same month, the US and the PA participated in an international conference held in London to prepare a program agenda for the PA for “institutional renewal”. Many observers viewed that the change in guard of the PA in January cleared a major obstacle to organizing this meeting and facilitating the participation of all stake holders in the Palestine question. It was attended by the PA president Abbas, the US Secretary of State Condoleezza Rice, the British Prime Minister Tony Blair (he later became Quartet special envoy to West Asian peace process), and foreign ministers of Arab countries (e.g. Saudi Arabia, Egypt). The meeting was important in the PA-US relations because both actors showed their enthusiasm to the peace process and towards establishing a democratic Palestinian state based on the Roadmap formula: “Its purpose is to rally the international community in support of the Palestinian Authority’s plans to build the institutions of a viable [democratic] Palestinian state”. Building the institutions meant incorporating western democratic polity and ‘viable institutions’ meant functional political structures to counter the threats of Hamas and Islamic Jihad and other radical groups in Palestine. These organizations had been a challenge to the US interests in the whole region. So, reform was a hidden plan of the US and Israel to divide the Palestinians. The PA was under tremendous pressure from the US and the EU to introduce institutional reforms as the two were the major financers of the former and the former was in dire need of financial aid. At the London meeting itself the US promised USD 350 million for “democratic [Palestinian] state” besides another USD 41 million as “quick-impact fund”. So, what is important here is that under the leadership of Abbas, the PA tried to revive the peace process and US began to engage with the PA (US Department of State 2005; Youngs 2005: 47; Foreign and Commonwealth Office, 2005).

From a Palestinian perspective, the London meeting was held to impress upon the Arab world and on Palestinians that the US was ‘committed to establish a democratic state in Palestine’ but for that PA must introduce reforms and Roadmap. However, there was little guarantee on borders, capital and even resettlement and rehabilitation of refugees. Yet there was no promise of the end of Israeli occupation or the stopping of further Israeli settlements. President Bush had waged war against two Muslim states i.e. Afghanistan and Iraq, on the pretext of his ‘war on terror’ and he was well aware that there was strong discontent and anti-US sentiments within the Muslim world, particularly in close allies like Saudi Arabia and Egypt, about the fate of the Palestinian people and the US reluctance to make a breakthrough in the Palestinian peace process. To a certain extent, European allies of the US were also disappointed in the lack of momentum in the peace process.

The London Meeting got special attention because the PA gave promises to the international community, in response to the participating countries demand for “implementing its Roadmap commitments”. The PA announced its decision to address issues related to governance, security and economic development. Among these three, governance and security were the key areas in which the international community, especially the US, was interested, because both would impact

Israeli security and the role of Hamas and other radical forces in Palestinian politics (FCO 2005: 1-17).

The Cairo and London meetings did not achieve their objectives. In July 2005, Hamas refused to participate in a national unity government proposed by Prime Minister Abu Alaa. Instead, Hamas called for the formation of a supreme national body for the Palestinian people at home and abroad, to be responsible for the entire Palestine issue. Hamas deemed Prime Minister Abu Alaa's government incapable of confronting the challenges facing the Palestinians. It pushed, instead, for adherence to the Cairo Agreement of March 2005, which called for accelerating the reconstruction of the PLO on new political and organizational democratic foundations to allow for the participation of other major factions, like Hamas and Islamic Jihad. Furthermore, Hamas stated that it was better for the PA to hold the legislative elections scheduled for July 17, 2005, rather than deferring them and calling for the formation of a new government based on broad consensus (Ghanem 2010: 113-114).

3. FACTORING INDIA IN THE POST-ARAFAT PALESTINE AND THE US

The unanticipated departure of Arafat from Palestine politics was a turning point in the long history of India–Palestine relations. Since the very beginning, India had been supporting Palestinian nationalism and the Arafat era was marked by strengthening relations as well. India's solidarity with the Palestinian people and its attitude to the Palestinian question was given voice during its freedom struggle by Mahatma Gandhi. Since then, empathy with the Palestinian cause and friendship with the people of Palestine have become an integral part of India's foreign policy (Ministry of External Affairs 2016:1).

Even now, there is no change in declared policy, but the determinants of India-Palestine relations have tremendously multiplied, and there are other external actors like the US and Israel. Interestingly, the role of the US in West Asia in general and Palestine in particular has special significance today.

As mentioned above, the US' dominant role in the Palestinian peace process and her growing influence on India has redefined the entire gamut of the debate on India's support to the Palestinian cause. There have been apprehensions and issues of commitment. Among other things, one major reason for such thinking was linked with the leadership change in Palestine with Mahamud Abbas as the Palestine President and PLO chairman. And the second concern was related to the domestic political change in India with the re-ascendency of Indian National Congress at the Centre with the support of Left parties after a lot of unprecedented twists and turns in the Palestinian peace process which began with the Oslo Accord in 1993 and virtually collapsed at Camp David in 2000. Meanwhile, the international focus on the US' 'war on terror' had badly affected the Palestine peace process, and talks were stalled (Economic Times 2017, Pradhan 2008:295-339). According to foreign policy analysts, commentators and scholars in India, the situation

that emerged has created an invisible role for the US in India-Palestine relations and they are viewing triangular aspects in India's Palestine relations, i.e. India-Palestine-the US. Unabated violence and continuing occupation of Palestine is a core issue in West Asia and this would definitely play a factoring role in India's policy towards the issue.

4. CONCLUSION

From the 1960s through 2004, Arafat dominated the leadership of both Fatah and the PLO and their various institutions. During his long association with the Palestinian movement, he held several key posts. But his untimely death was an irreparable loss to the Palestinians and it also created a leadership vacuum as he was the symbol of the Palestinians' national struggle. He summed up the continued sentiment that the only obstacle to establishing an independent Palestinian state was Israeli-US hostility to the demand. On the other hand, the US, particularly during the Bush regime, considered him a deal breaker, an obstacle to peace in the region. Arafat departed from the Palestinian political scene during a critical phase of Palestine-US relations. There was serious apprehension about the future of the PA in the context of Arafat's death. But the political process adopted by the PA and PLO, to resolve the succession issue has demonstrated a high level of political maturity. The PA presidential election, held in January 2005, once again proved that the Palestinians were truly democratic in determining their own affairs, even though there were domestic and external challenges. A perennial problem in this context was resisting the US pressure and simultaneously engaging with the former to secure peace and settlement of the issue. Palestine-US relations in the post-Arafat era were marked by a series of significant developments, but nothing of substance emerged to resolve the Palestine-Israel conflict. During this period, Prime Minister Sharon announced unilateral disengagement from the Gaza Strip, which was essentially an Israeli plan to shift the focus from the West Bank territory to the tiny strip of Palestine. Subsequent to this disengagement plan, a major event in the post-Arafat era was the election victory of Mahmoud Abbas as PA President, that offered scope for a resumption of the peace process and implementation of the Quartet Road Map. But Prime Minister Sharon suspended official contact with the Palestinians, hardly a week after Abbas became president. This showed the fundamental tendency of Israel towards delegitimizing the democratic choice of Palestinians.

Domestically speaking, the elections had deepened internal rift in Palestine. Fatah-Hamas differences were resolved by the mediation of Egypt in a meeting held in Cairo, during 15-17 March 2005, which decided to end the conflict by inducting other groups into the government. It also reached a broad consensus to conduct elections on schedule and to make the Palestinian movement more democratic and representative of all sections of the Palestinian society. The meeting also accepted supporting President Abbas' plan to resume peace negotiations with Israel and the US. It was a rare show of unity among secularists, Islamists and militants in the Palestinian movement to achieve their important national goals and internal reform.

As regards PLO reforms, President Abbas convened a PLO-EC meeting on 28 March 2005 at Gaza. Islamic Jihad attended it but Hamas boycotted it, claiming that it was a retreat from the Cairo agreement. Hamas said that the meeting should be conducted after the inclusion of the two organisations rather than inviting them to it as non-members. The PLO did not include Hamas and Islamic Jihad as members because their inclusion would dilute the PLO's position and would have repercussions from the US and Israel. The US had demanded strong action against these groups and asked the PLO not to give them any role in reforming the Palestinian polity. This US position created further political instability in the PA and widened the Fatah-Hamas divide.

The US and the PA, meanwhile, participated in an international conference held in London in March 2005 to prepare a programme agenda for the PA for "institutional renewal". The meeting was important for PA-US relations because both actors showed enthusiasm for the peace process and to establish a democratic Palestinian state based on the Roadmap formula. From a Palestinian perspective, the London meeting was held to impress the Arab world. However, there was little guarantee on borders, capital and even resettlement and rehabilitation of refugees. There was no promise to end Israeli occupation or to stop further Israeli settlements. The US' policy had no change, and, is tilted towards Israel vis-à-vis Palestine.

As far as India is concerned with the Palestine question, the country has deep concern and always supports a settlement through negotiations, and mutual recognition by Palestinians and Israelis. In addition to this position, India rejects any resolution of the issue without recognizing the legitimate concerns and national rights of Palestinians. At the same time, India strongly opposes any challenge on Israel's right to exist as a country in the West Asian region, and is looking forward to see a permanent solution of the issue. However, the emerging political environment in the region in general, and Palestine in particular, has been generating great concern for India as peace becomes more elusive. In addition to this, the deficient focus of the US to the issue is also another serious concern for India in the context of the Abbas era of Palestinian politics.

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Evolving Indo-Afghan Relations and Regional Balance

P. Krishna Mohan Reddy*

Abstract

The paper studies the evolving Indo Afghan relations in the context of the post Bonn Conference scenario in the West Asian region. The situation attracts attention because of the increased interest expressed by the US and European countries in the path of development chosen by Afghanistan. Under the circumstance, India has been under compulsion to modify its policies to face the changing situation in South Asia since terrorism emanating from Afghanistan and Af-Pak region.

Key Words : Indo-Afghan Relations, Bonn Conference, Af-Pak region, Regional Balance

1. INTRODUCTION

After the Bonn Conference of 2011, a continuous evaluation has been made by the US and the European powers with regard to the policy to be adopted in Afghanistan. Such an evaluation gradually led to the thinking in the American establishment that while continuing its financial assistance, the US should decrease its military presence in Afghanistan. The North Atlantic Treaty Organization (NATO) also preferred such an approach which would result in a steady reduction of troop presence although the training the Afghan military and security forces will increase to facilitate the ultimate goal of Afghan security forces themselves providing security to their citizens. As a result, not only Afghanistan but also Pakistan and India have also been modifying their policies to face the changing situation in South Asia since terrorism emanating from Afghanistan and Af-Pak region by the terrorist organizations like the al-Qaeda, Taliban, Haqqani Network, the Lashkar-e-Tayyiba (LeT), Quetta Shura Taliban, Tehrik-e-Taliban Pakistan (TTP) has affected almost all the parts of South Asia. Barack Obama's 'Rebalancing Asia' policy is stated to be aimed at containing China's rise and encouraging India. Despite several supportive statements, gestures and visits the American policy makers still did not come out with a clear proposals or policy initiatives that help India increase its role in Asia with the American support. Against this background, an attempt is made to understand the nature of the evolving Indo-Afghanistan relations vis-à-vis regional balance in South Asia.

2. INDIA AND THE CHANGING POLITICAL EQUATIONS IN AFGHANISTAN

Before the Americans actually began their gradual decrease of their military forces, before 2011, there has been a serious debate among the security experts, scholars and strategy thinkers

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as to whether it is sound strategy or not. Some scholars argued the case for withdrawal while others preferred staying the course (Bacevich 2013: 85-96 and Kagan 2013:97-114). An international conference was held in New Delhi in 2012 to specifically discuss the various dimensions of Afghanistan and the proceedings were published in 2016 (Roy and Sarkar eds. 2016). Concerns were expressed about the future repercussions if the NATO forces withdraw from Afghanistan (Nuri 2016: 63-76 and Khalid 2016:239-242). A sovereign, stable and united Afghanistan, free from outside influence is in India's interest. India would not want Afghanistan to come under Pakistan's exclusive sphere of influence (Sikri 2009: 52-54). Although scholars have cautioned about the after-effects of the NATO withdrawal on Afghanistan since 2012, no serious research seems to have been done on the nature of the Indo-Afghan relations and its likely effect on the balance in South Asia. Serious concerns of India of threats from the Pakistani ISI which guides its terrorists against India were however expressed, if and when the US/NATO withdraws from Afghanistan (Tharoor 2013:234-35). Afghanistan is clearly a crucial country for India's national security, as it is for the United States (Tharoor 2013:284). On the other hand, how the NATO withdrawal from Afghanistan affects the overall balance in South Asia is not sufficiently addressed.

Much of the uncertainty India faces with regard to its own role and the general balance in South Asia is owing to the ambiguity in the policy articulation of USA. USA needs Pakistan in its dealings with Afghanistan. The US has also been appreciative of the continuous Indian help to the Afghan people. India's assistance programme to Afghanistan has focused on humanitarian infrastructure, social projects and the development of capacity and skills. The Americans do not want India to play an aggressive role or military role to help Afghanistan since USA does not want to antagonize Pakistan. India has also been reluctant to play any direct military role in Afghanistan so far. Therefore, the triangular interaction among the US, Pakistan and India in the coming years is likely to result in a 'rebalancing' in South Asia. Interestingly both Hamid Karzai, the former President and Ashraf Ghani, the present President have expressed their gratitude and warmth for the continuous Indian assistance to Afghanistan.

In so far as the India's role is concerned, India has been a keen supporter of Afghanistan. In 1999, India became one of the key supporters of the anti-Taliban Northern Alliance. India's support and collaboration extends to rebuilding of air links, power plants and investing in health and education sectors as well as helping to train Afghan civil servants, diplomats and police. In 2005, India proposed Afghanistan's membership in the South Asian Association for Regional Cooperation (SAARC). Both nations also developed strategic and military cooperation against Islamic militants. Three memorandums of understanding (MOUs) for strengthening cooperation in the fields of rural development, education and standardisation during Hamid Karzai's visit to India in April 2006. During the 15th SAARC summit in Colombo, India pledged another \$450 million, alongside a further \$750 million already pledged, for ongoing and forthcoming projects. India condemned the assassination of former Afghan President Burhanuddin Rabbani in September 2011. India reiterated the steadfast support of the people and government of India in Afghanistan's 'quest for peace and efforts to strengthen the roots of democracy'. India pledged to expand its economic presence in

Afghanistan as the international coalition fighting the Taliban withdraws combat forces through 2014 (The Hindu 2015).

The most important element of the new strategic landscape in South Asia is the ongoing withdrawal of the US and the resultant power vacuum as well as the rebalancing forces in the region. China has begun the process of filling the post-American power vacuum, without military involvement for the moment. The withdrawal by the U.S. and the resulting strategic uncertainty could also provide a favourable environment for the Taliban and the Islamic State (IS) to enhance their influence in the region (Jacob 2015). India has consistently expressed its unwillingness to involve itself militarily in Afghanistan. On the other hand, India needs to take into account the reports that it has made some inroads into Pakistan and some Pakistan-based terror outfits have offered their allegiance to the IS. India cannot also ignore the inputs that IS has also been making recruitments from India. Hence, for India, the potential resurgence of the Taliban and the rise of the IS have dangerous implications.

At the moment it is difficult to assess if there is a power vacuum in South Asia in the context of a US withdrawal from Afghanistan. Despite being a weak state, Afghanistan under both Hamid Karzai and Ashraf Ghani has managed to maintain a reasonable level of security as well as law and order in Afghanistan. These leaders also have to be credited with successfully conducting elections, despite the desperate attempts to disrupt the elections by the Taliban, which gave them the legitimacy to govern Afghanistan. Under both these leaders, there has been a progressive decline of the terrorist attacks and bombings in Afghanistan. Therefore, in spite of some short comings, even after Obama's "Rebalancing Asia" strategy, the political leadership and the security forces have been doing a commendable job of providing stability to Afghanistan and upholding the Afghan constitution. The real challenge for the stability of Afghanistan would be to face Taliban and to a lesser extent, the IS within Afghanistan as well as their sister organizations from the Af-Pak region where they are based. As long as the Pakistan military and the ISI continue to fund, train and support these elements in Pakistan, Kabul would face a similar situation. However, even for Pakistan, it would be very difficult to dislodge the state of Afghanistan by supporting the terrorist elements both within and outside Afghanistan.

Some delays in Indian projects are also believed to be hampering Indo-Afghan ties. India has committed \$2 billion in development aid to Afghanistan so far. There are few new infrastructure projects that India has taken up in the past few years. The big ones, which were planned a decade ago, have been complete, including the Zaranj Delaram highway (which connects to Iran), the Herat dam, the Doshi-Charikar power project, and the construction of Afghanistan's parliament complex. India also has plans for the Chabahar port in Iran and the trilateral agreement to develop transit trade which needs close attention. The trilateral agreement needs to be ratified in Iran. Tenders by India Ports Global Limited to develop berths as well as the railway line connecting Chabahar to the Afghan border at Zahedan which was first planned in 2011, needs to be speeded up. Likewise, there has not been sufficient follow-through on the Turkmenistan-Afghanistan-

Pakistan-India gas pipeline after its inauguration in 2015 (Jacob 2015). New Delhi needs to finish the projects in Afghanistan it committed within a reasonable time. In spite of some hiccups, the Indian aid and assistance to Afghanistan has generated a huge good will for New Delhi not only among the politicians and bureaucrats but also among the media as well as the common man.

In the current scenario, amidst the US withdrawal, there are only two regional players in Afghanistan viz. Pakistan and India. Afghanistan's relations with Pakistan in the last decade have deteriorated and sometimes turned bitter because of the tacit support Pakistan offers to the terrorist organizations operating in Afghanistan and from Af-Pak region. The continuous efforts by Kabul for a benign friendship of Pakistan have had only frustrating results for the Afghan leadership. On the other hand, India has been offering benevolent hand shake in letter and spirit. If Islamabad does not choose a course correction, then Kabul is bound to align more with India in the absence of US security assistance. One possible player which can influence the emerging architecture of balance in South Asia is China. In the last two decades China has firmly refused to play any role militarily or in the security issues in Afghanistan. Chinese policy towards Afghanistan gained momentum around 2006 though China showed little interest in the reconstruction of Afghanistan following the overthrow of the Taliban. The bilateral trade between China and Afghanistan has been extremely limited while bilateral trade has steadily increased. Chinese state owned companies have invested billions of dollars in Afghanistan in projects ranging from telecom to copper mining. In addition China has been using the Shanghai Cooperation Organization (SCO) for furthering its economic interests. In China's formulation, Afghanistan is a vitally strategic location that connects South Asia and Central Asia. The Chinese foreign policy makers are well aware of the strategic opportunities and challenges Afghanistan offers after the US withdrawal (Reddy 2016: 183-198). Whenever Beijing felt that it has not been successful in securing its interest bilaterally with Afghanistan, it has been attempting to pursue the goal through the SCO. Such a policy is extremely useful to China since it circumvents unnecessary confrontation with the security situation in Afghanistan. Secondly, Beijing can also avoid uncalled for publicity against its economic interests in Afghanistan. As an 'all weather friend', China would naturally support Pakistan vis-à-vis Pakistan-Afghanistan interaction which is directed against India's growing influence in Afghanistan.

3. CONCLUSION

India needs to utilize the South Asian Association for Regional Cooperation (SAARC) for enhancing its engagement with Afghanistan in which China has no role to play. India needs to continue its aid and assistance to Afghanistan bilaterally. Such Indian bilateral engagement should also be complimented by offering Afghanistan a more prestigious space as well as an enlarged role to play in the SAARC. In the aftermath of the US withdrawal from Afghanistan, the current situation in South Asia does not portend a power vacuum as the existing three regional powers viz. Afghanistan, Pakistan and India are not likely to alter the regional balance dramatically. The states and governments in these nations, even in Afghanistan are reasonably stable and legitimate. Even if USA withdraws militarily from Afghanistan, Washington, as a super power, cannot afford to

abandon Afghanistan to a chaotic situation where Kabul will be subject to the terrorist attacks from the Taliban and the IS. Hence, USA would continue to support Kabul with monetary aid and military training for the Afghan security forces. In other words, although the physical presence of the US/NATO forces would be minimal in Afghanistan, Washington would still be an active player in Afghanistan. Pakistan might desire a more prominent role in the Afghan affairs, but the same militant forces Islamabad encourages against Afghanistan and India pose an increased danger to Pakistan's own internal security. India is reluctant to play any military role or an aggressive role in Afghanistan as New Delhi maintains that Afghans should decide their own future without outside influence. China's interest in Afghanistan is mainly economical and it has no military role to play in Afghanistan. Beijing may be ready to support Pakistan against India but in case of Afghanistan, it has not much to offer Pakistan. The Indo-Afghan relations have been blossoming since the last decade and they are poised for further deepening friendship given the good will New Delhi enjoys in Afghanistan. Therefore, even after the US withdrawal from Afghanistan, it appears, there would not be any dramatic shift in the regional balance in South Asia. The regional powers seem to prefer a status quo rather than a rebalancing in South Asia.

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Integration through Trade and Investment with Special Reference to SAFTA

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Abstract

India played a pro active role in determining the effectiveness of South Asian Free Trade Area (SAFTA) because of its economic strength. This study highlights recent trends in India's total trade relationship with SAFTA economies, in general, and with each members of the trade bloc, in particular, during the period from 2010 to 2016. The paper employs the technique of compound annual growth rate to find out the growth rate of exports and imports. Also an analysis has been made on India's exports and imports, total trade and balance of trade with south Asian countries. The trend shows that in general both imports and exports were increasing over time except a negative export trade balance with Pakistan and negative import trade balance with Nepal and Maldives.

Key Words: SAFTA, India, South Asia, Economic Integration, Exports, Regional trade.

1. INTRODUCTION

For the past many decades, the South Asian economies have been relentlessly striving to attain higher fronts of development through many means. Since 1990s, the South Asian economies have made lot of hard work to augment trade and investment flows with the intention of achieving a diminution in poverty and improving growth and development in the region. South Asia economies also initiated economic reform measures such as deregulation of industries and other structural reforms in 1990s. By identifying the importance of exports for overall growth, the governments and the private sector have accepted that export-led growth is a driving force for each member country. The attempts by each member country to integrate with the global economy are evidenced by the improvement in the merchandise trade.

The recent past has witnessed that Regional Trade Agreements have, more or less, reformed the world trade panorama. Both developed and developing nations are actively participating in such regional trade agreements. The paper aims to understand the implications of the Agreement on the South Asian Free Trade Area (SAFTA) launched in 2006 by the South Asian countries. 3

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2. METHODOLOGY

The paper aims to not only outline a brief summary of SAFTA countries, but mainly to analyse India's total trade relationship with South Asian countries and also find out the compound annual growth rate of exports and imports.

Compound Annual Growth Rate (CAGR) is:

$$\text{CAGR} = \left(\frac{\text{Ending Value}}{\text{Beginning Value}} \right)^{\left(\frac{1}{\# \text{ of years}} \right)} - 1$$

The data consists of India's export and import, total trade and balance of trade with seven of the SAFTA countries. The time period for the analysis is from 2010 to 2016.

3. SAFTA AND INDIA'S TRADE IN SOUTH ASIA

During a summit in Islamabad in January 2004 the South Asian Association for Regional Cooperation (SAARC) members decided to establish a free trade area in South Asia. Thus "Islamabad Declaration" launched the South Asian Free Trade Area (SAFTA) on January 1, 2006. This decision brought in intense economic and political changes in the South Asian economies. The member countries promised to uphold and augment mutual trade and economic cooperation among themselves. The major objectives included facilitating the cross-border movement of goods between the member states; successful implementation and application of this agreement, eliminating barriers to trade & commerce, promoting conditions of fair competition in the free trade area, joint administration and the settlement of disputes; establishing a framework for further regional cooperation to expand and enhance the mutual benefits of the agreement, ensuring benefits in equitable manner to all states.

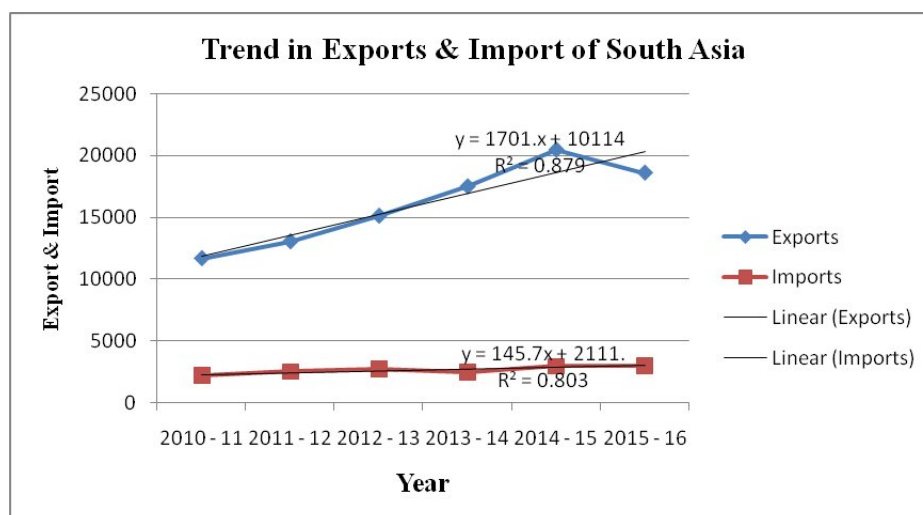
The earlier studies revealed that India would reap significant benefits under SAFTA. Among the SAFTA members, India could be expected as the major winner due to its initial high tariffs and biggest manufacturing sector (Bandara and Yu 2003). There is strong evidence of trade creation in the region under SAFTA, with no trade diversion effect as far as trade with non-members is concerned (Hiranth 2003). India served as the growth pole for the South Asian economies, and found out that smaller, least-developed countries will gain due to the South Asian free trade agreements (UNCTAD and ADB 2008). In this paper India's trade to South Asian countries like Bangladesh, Pakistan, Sri Lanka, Nepal, Bhutan, Afghanistan and Maldives is subject to study and the exports, imports, total trade and balance of trade relations of these countries with India has been analyzed and results have been produced.

Table 1: India's Balance of Trade to South Asian Economies (Value in US \$ million)

| Year | Exports | Total Exports | (%) Share | Imports | Total Imports | (%) Share |
|-------------|--------------|---------------|-----------|--------------|---------------|-----------|
| 2010 - 11 | 11659 | 2,51,136 | 4.64 | 2173 | 369769 | 0.588 |
| 2011 - 12 | 13033 | 304624 | 4.28 | 2498 | 489181 | 0.511 |
| 2012 - 13 | 15111 | 300401 | 5.03 | 2680 | 490737 | 0.546 |
| 2013 - 14 | 17504 | 314405 | 5.57 | 2473 | 450200 | 0.549 |
| 2014 - 15 | 20480 | 310338 | 6.60 | 2931 | 448033 | 0.654 |
| 2015 - 16 | 18620 | 262290 | 7.10 | 2975 | 381007 | 0.781 |
| CAGR | 9.82% | | | 6.48% | | |

Source: Economic Survey, Various issues, Government of India.

India's balance of trade with other South Asian countries has seen a significant increase with respect to value and as a percentage share of its overall trade. Perusal of Table 1 shows that India's export to South Asia has increased from US\$ 11659 million in 2010-11 to US\$ 18620 million in 2015-16. India's share of export to south Asia region, in percentage terms, has also increased from 4.64% in 2010-2011 to 7.10 % in 2015-2016. The compound annual growth rate of South Asian exports was 9.82 percent. As far as imports are concerned, India's share have been only 0.58, 0.51, 0.54, 0.54, 0.65 & 0.78 for the years 2010-11, 2011-12, 2012-13, 2013-14, 2014-15 & 2015-16, respectively. The compound annual growth rate of South Asian imports was 6.48 percent. Figure 1 shows India's export and import trend to South Asian countries. The export trend indicates a positive and linear relationship and R^2 is 87 percent i.e. the variations are explained by the variables included in the function. The import trend also indicates a positive and linear relationship and R^2 is 80 percent i.e. the variations are explained by the variables included in the function.

Figure 1: Trend in Exports & Imports of India to South Asian Countries

India's Balance of Trade with Sri Lanka

The Indo - Sri Lanka trade relations instigate from the colonial period and rapport was strengthened by the formation of SAARC, SAPTA (South Asian Preferential Trade Arrangement) in 1995 and SAFTA (The Agreement on South Asian Free Trade Area) in 2006. All these lead to a greater economic integration. Table 2 depicts India's balance of trade to Sri Lanka which shows an increasing trend from US\$ 4542 million in 2010-11 to US\$ 6053 million in 2015-16. India's export with Sri Lanka has shown a significant increase from US\$ 4040 million in 2010-11 to US\$ 5310 million in 2015-16. The imports also increased from US\$ 502 million in 2010-11 to US\$ 743 million in 2015-16. The compound growth rate of exports and imports is 5.62 percent and 8.16 percent respectively.

Table 2: India's Balance of Trade with Sri Lanka (Value in US \$ million)

| Year | Exports | Imports | Total Trade | Balance of Trade |
|-------------|--------------|--------------|--------------|------------------|
| 2010 – 11 | 4040 | 502 | 4542 | +3538 |
| 2011 – 12 | 4379 | 721 | 5100 | +3658 |
| 2012 – 13 | 3984 | 626 | 4610 | +3358 |
| 2013 – 14 | 4534 | 667 | 5201 | +3867 |
| 2014 – 15 | 6704 | 756 | 7460 | +5948 |
| 2015 – 16 | 5310 | 743 | 6053 | +4567 |
| CAGR | 5.62% | 8.16% | 5.91% | |

Source: Economic Survey, Various issues, Government of India.

India's Balance of Trade with Pakistan

The South Asian Free Trade Area agreement boosted the Indo – Pak trade relations. Table 3 reveals the data on India's trade with Pakistan along with the compound annual growth rate. Perusal of the table indicates that total exports from India to Pakistan declined from US\$ 2334 in 2010 -11 to US\$ 2171 in 2015-16. India's export growth rate is not much impressive and CAGR is negative 1.44 percent. At the same time import data exhibit a positive growth rate of 5.68 percent. Total trade is negative at a rate of 0.42 percent.

Table 3: India's Balance of Trade with Pakistan (Value in US \$ million)

| Year | Exports | Imports | Total Trade | Balance of Trade |
|-------------|---------------|--------------|---------------|------------------|
| 2010 - 11 | 2334 | 333 | 2667 | +2001 |
| 2011 - 12 | 1542 | 422 | 1964 | +1120 |
| 2012 - 13 | 2065 | 542 | 2607 | +1523 |
| 2013 - 14 | 2275 | 427 | 2702 | +1848 |
| 2014 – 15 | 1857 | 497 | 2354 | +1360 |
| 2015 – 16 | 2171 | 441 | 2612 | +1730 |
| CAGR | -1.44% | 5.78% | -0.42% | |

Source: Economic Survey, Various issues, Government of India.

India's Balance of Trade with Afghanistan

India's export relations with Afghanistan began to improve with the emergence of SAARC, but have not yet perfectly normalized. Table 4 incorporates the data on India's trade with Afghanistan along with the compound annual growth rate. India's export to Afghanistan has shown a significant increase from US\$ 412 million in 2010-11 to US\$ 527 million in 2015-16. The compound annual growth rate of exports is just 5.05 percent. As far as imports are concerned there exists a 16.10 percent growth.

Table 4: India's Balance of Trade with Afghanistan (Value in US\$ Million)

| Year | Exports | Imports | Total Trade | Balance of Trade |
|-------------|--------------|---------------|--------------|------------------|
| 2010 – 11 | 412 | 146 | 558 | +266 |
| 2011 – 12 | 511 | 119 | 630 | +392 |
| 2012 – 13 | 473 | 160 | 633 | +313 |
| 2013 – 14 | 474 | 209 | 683 | +265 |
| 2014 – 15 | 423 | 262 | 685 | +161 |
| 2015 – 16 | 527 | 308 | 835 | +219 |
| CAGR | 5.05% | 16.10% | 8.40% | |

Source: Economic Survey, Various issues, Government of India.

India's Balance of Trade with Bangladesh

India- Bangladesh trade and investment relationship has a great impact on the socio-political and economic demography of the South Asian region and relations between them influences the fate of trade in the region. Both countries share more than 4096 km contiguous border and can benefit immensely by enhancing bilateral trade and investment. For achieving long term development agenda and enhancing competitiveness in the Bangladesh economy, they adopted an outward-oriented growth strategy. As per Global Economic Prospects June 2017, despite ongoing security concerns, the growth in trade is attributed to agricultural sector and services sector. India's trade with Bangladesh is given in Table 5, from the data it can be clearly understood that the overall exports of India to Bangladesh has shown a significant improvement from US\$ 3606 million in 2010-11 to US\$ 6035 million in 2015-16. The compound growth rate of export and import are 10.85 and 10.22 percent respectively. The total trade revealed an increase from US\$ 4053 million to US\$ 6762 million in 2015-16.

Table 5: India's Balance of Trade with Bangladesh (Value in US\$ Million)

| Year | Exports | Imports | Total Trade | Balance of Trade |
|-------------|---------------|---------------|---------------|------------------|
| 2010 – 11 | 3606 | 447 | 4053 | +3159 |
| 2011 – 12 | 3789 | 427 | 4216 | +3362 |
| 2012 – 13 | 5145 | 543 | 5688 | +4602 |
| 2013 – 14 | 6167 | 484 | 6651 | +5683 |
| 2014 – 15 | 6451 | 621 | 7072 | +5830 |
| 2015 – 16 | 6035 | 727 | 6762 | +5308 |
| CAGR | 10.85% | 10.22% | 10.78% | |

Source: Economic Survey, Various issues, Government of India.

India's Balance of Trade with Nepal

The Indo-Nepal trade relations are the product of the age old cultural, geographical and economic ties between the two countries since the dawn of civilization in the Indian sub-continent. Their relations acquired a new dimension in 1951 when the first treaty on trade and commerce was signed by the two nations. Since Nepal is a land locked country, treaties on trade and transit used to be entered between the governments of two countries almost every five years. The treaties gave provisions for conducting mutual trade in rupees, dismantling basic customs duties as well as quantitative restrictions. Agreements were also reached to promote technical cooperation and diversify trade between the two countries. Global Economic Prospects June 2017 states that favourable monsoon, reconstruction efforts and normalization of trade across southern borders with India are the major factors that contributed to Nepal's growth. Table 6 shows India's trade with Nepal along with the compound annual growth rate of exports. India's export to Nepal has shown a notable improvement from US\$ 2204 million in 2010-11 to US\$ 3930 million in 2015-16. The Compound growth rate of exports is 12.26 percent. Imports showed a negative growth of 1.69 percent. The total trade also improved from US\$ 2717 million in 2010 -11 to US\$ 4401 million in 2015-16.

Table 6: India's Balance of Trade with Nepal (Value in US\$ Million)

| Year | Exports | Imports | Total Trade | Balance of Trade |
|-------------|---------------|---------------|---------------|------------------|
| 2010 – 11 | 2204 | 513 | 2717 | 1691 |
| 2011 – 12 | 2722 | 585 | 3307 | 2137 |
| 2012 – 13 | 3089 | 639 | 3728 | 2450 |
| 2013 – 14 | 3592 | 530 | 4122 | 3062 |
| 2014 – 15 | 4559 | 640 | 5199 | 3919 |
| 2015 – 16 | 3930 | 471 | 4401 | 3459 |
| CAGR | 12.26% | -1.69% | 10.13% | |

Source: Economic Survey, Various issues, Government of India.

India's Bilateral Trade with Maldives

Indo-Maldives trade relations started soon after the independence of Maldives in 1965. India's exports to the Maldives have been growing exponentially and India continues to be Maldives' third largest trading partner. Table 7 shows India's trade with Maldives along with the compound annual growth rate of exports. The total export from India to Maldives increased from US\$ 107 million in 2010-11 to US\$ 179 million in 2015-16. The compound growth rate is 10.84 percent.

Imports showed a negative growth of 33.6 percent. The total trade also enlarged from US\$ 138 million in 2010-11 to US\$ 183 million in 2015-16.

Table 7: India's Balance of Trade with Maldives (Value in US\$ Million)

| Year | Exports | Imports | Total Trade | Balance of Trade |
|-------------|---------------|----------------|--------------|------------------|
| 2010 - 11 | 107 | 31 | 138 | 76 |
| 2011 - 12 | 125 | 20 | 145 | 105 |
| 2012 - 13 | 122 | 6 | 128 | 116 |
| 2013 - 14 | 106 | 4 | 110 | 102 |
| 2014 - 15 | 152 | 4 | 156 | 148 |
| 2015 - 16 | 179 | 4 | 183 | 175 |
| CAGR | 10.84% | -33.60% | 5.81% | |

Source: Economic Survey, Various issues, Government of India.

India's Balance of Trade with Bhutan

India acts both as development and emerging trade partner with Bhutan. The India-Bhutan Trade and Commerce Agreement was first signed in 1972 and was renewed periodically, with mutually agreed modifications. The existing free trade regime between two nations was last renewed in 2006 for a period of 10 years. The Agreement provides for duty free transit of Bhutanese merchandise trade with third world countries. Global Economic Prospects June 2017 analysed macroeconomic policies, strong energy and construction sectors paved the growth of Bhutan's economy. India's total trade with Bhutan indicates a threefold increase from US\$ 378 million in 2010-11 to US\$ 750 million in 2015-16. Table 8 exhibits India's balance of trade with Bhutan along with the compound annual growth rate of exports. The export data shows an increasing trend from US\$ 176 million from 2010-11 to US\$ 469 million in 2015-16. The compound growth rate is 21.66% per annum which indicates India has got highest export growth is with Bhutan.

Table 8: India's Balance of Trade with Bhutan (Value in US\$ Million)

| Year | Exports | Imports | Total Trade | Balance of Trade |
|-------------|---------------|--------------|---------------|------------------|
| 2010 – 11 | 176 | 202 | 378 | -26 |
| 2011 – 12 | 230 | 204 | 434 | +26 |
| 2012 – 13 | 233 | 164 | 397 | +69 |
| 2013 – 14 | 356 | 152 | 508 | +204 |
| 2014 - 15 | 334 | 150 | 484 | +184 |
| 2015 - 16 | 469 | 281 | 750 | +188 |
| CAGR | 21.66% | 6.82% | 14.69% | |

Source: Economic Survey, Various issues, Government of India.

4. CONCLUSION

India's bilateral trade with the South Asian countries witnessed a general increase in the overall trade. This study highlights that the total exports by India to South Asian economies showed a significant improvement except with Pakistan. As far as imports are concerned, Maldives and Nepal has registered a negative trade balance of imports during 2010-16. Results also indicate that India has a massive trade surplus with Srilanka, Bangladesh, Nepal and Bhutan. During 2010-16, Bhutan was the leading export partner of India in South Asian region. During 2010-16, the lowest growth in trade balance of exports was recorded for Srilanka & Afghanistan. To conclude, South Asian countries have got immense potential to expand their trade, which makes SAFTA a successful trade and investment integration.

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Refugee induced security challenges in South Asia: Context of India and Bangladesh

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Abstract

The state security in south Asia appears to be at stake because of various traditional and non-traditional security threats. This paper focuses on the state security challenges that are related to refugee or illegal migrants from other south Asian countries. The refugees are, no doubt, in a humanitarian crisis and living in inhuman conditions. They are also imposing security threat for the host country. Among the eight countries of south Asia, only Maldives is not facing such kind of problems. But they are not free from the problems of internally displaced persons (IDPs). The refugee crisis is further aggravating the issues of smuggling of narcotics, small arms and other exotic weapons; and the growing nexus between arms dealers, drug traffickers, militants and frustrated populations is putting an ominous shadow on the security aspects in South Asia. In the case of Bangladesh and India, the lack of policies worsens the security threats for the country. This paper sheds light on the relatively overlooked state security issues caused by the illegal migrants and refugees in South Asia, especially in Bangladesh and India.

Key Words : India, Bangladesh, Non-Traditional Security Threats, Refugees

1. INTRODUCTION

Everyone has the right to seek a safe place to live, (UDHR Article 14) but this provision in the Universal Declaration of Human Rights (UDHR) is passing through a crucial time worldwide, especially in developing and poor countries. South Asia is world's most populated area and is a place of enormous problems including poverty, illiteracy, unemployment etc. The population explosion is not effectively controlled by the governments of this region. There are numerous circumstances where the States of this region failed to fulfill the fundamental rights of their citizens. Together, the region faces severe issues of migration, internally displaced persons, stateless people and refugee problems. There are 214 million estimated international migrants in the world today and they comprise 3.1 percent of the global population.

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South Asia comprises of eight nations- Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. Among these countries India, Bangladesh and Pakistan are mostly suffering from the refugee crisis. Pakistan is in the top in hosting refugees in this region, including mostly, Afghan refugees, as well as Middle Eastern refugees. Nepal is also suffering from Bhutanese refugees. While Maldives is not facing the direct effect of refugees but they are suffering from internally displaced persons (IDPs), both Sri Lanka and Bangladesh are troubled by internally displaced persons and is also producing refugees. Bangladesh, being a small developing country with high population density, is again challenged by the onslaught of Rohingya Muslim refugees from Myanmar. The growing rate of refugee flow compels the South Asian states to give asylums upon humanitarian ground. In this aspect India could be the best example, as it is not the signatory of 1951 Refugee convention, neither the 1967 protocol, but is giving asylum to innumerable refugees. India hosts refugees from Bangladesh (Chakma, Bengali), Myanmar (Rohingya), Sri Lanka (Tamil), Afghanistan, Tibet etc. As the security trends are changing, this continuous refugee flow also challenges the security of the states. In the age of globalization the scope of terrorism and transnational crimes are also spreading through illegal migrants and refugees. Because of common historical background, common culture and physical features among the people of this region, they can easily assimilate with other countries people and this is also a threat to the state security.

2. DEFINING REFUGEE AND SECURITY

There is no specific definition of “Refugees”. According to the 1951 refugee convention and 1967 protocol, ‘a refugee is a person who, owing to a well founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular group or political opinion, is outside the country of his nationality and is unable or owing to such fear, is unwilling to avail himself of the protection of the country of his former habitual residence as a result of such events, is unable or owing to such fear, is unwilling to return to it.’ (1951 Refugee Convention, 1967 protocol). One should also remember that one country’s IDPs today have the potential to end up as either refugees or migrants in bordering countries tomorrow.

With respect to the question of security, the host state faces both traditional and nontraditional security threats in areas including political security, social security, economic security etc. According to Barry Buzan (1991:432-433), “Security is taken to be about the pursuit of freedom from threat and the ability of states and societies to maintain their independent identity and their functional integrity against forces of change, which they see as hostile. The bottom line of security is survival, but it also reasonably includes a substantial range of concerns about the conditions of existence. Quite where this range of concerns ceases to merit the urgency of the “security” label (which identifies threats as significant enough to warrant emergency action and exceptional measures including the use of force) and becomes part of everyday uncertainties of life is one of the difficulties of the concept.”

The world is facing enormous problems, but migration and refugee crisis is the most vulnerable ones with respect to human rights as well as state security. South Asia is one of the most populated and underdeveloped regions of the world. According to the OECD world migration data of 2013, among South Asian countries the international emigration rate is Afghanistan 1.8, Bangladesh 0.5, India 0.4, Pakistan 1.0 and Sri Lanka 3.2. People of this region who migrated to other regions like West Europe does not create a visible security threat for the South Asian states. But the illegal migrations that are happening within the states of the South Asian region create a lot of problems and it also threatened the security and sovereignty of the states. The topic refugee crisis comes under migration and it also includes the internally displaced persons (IDPs). But here we are talking about external refugees because this recent trends of migration pose security challenges to the host countries as well as the region. This paper aims to find out the security challenges of India and Bangladesh that are happening as a result of illegal migrants as well as refugees from neighbouring countries.

The study would be to examine the major security challenges for Bangladesh and India created by refugees and the less-effective adaptation and mitigation strategies to reduce these existing threats.

PR Chari in *Refugees, Migrants, Stateless and Internally Displaced Persons in South Asia*, lists the twelve important population movements in the region since the partition of the Indian subcontinent in 1947. He mentions the security dimensions of population displacement in South Asia such as disruption of the domestic peace of the host state, linkages with the criminal groups and possible resistance between the country of origin and factors of asylum. He also suggests the adoption of a holistic approach to this issue by securing the cooperation of international and regional organizations is not fruitful especially with regard to SAARC.

Suba Chandran analyses in a lucid manner whether these refugee persons are really a security threat or not. But he does not furnish inputs as to how they are made as security tools by the states in order to achieve their political gains. He described his assumption with the case study of Sri Lanka. Wasbir Hussain recapitulates the situation of Bangladeshi Migrants in India. The demographic profile of Assam and Tripura has changed drastically due to the trans-border migration. This issue has arisen a serious emotional uprising among the indigenous Assamese and Tripura people leading to violence.

CR Abrar sheds light on Burmese refugees in Bangladesh. Unwinding the decade-long problem, the author discusses the role of UNHCR and other NGOs in bringing back the normalcy. Alison Gerard in *'The Securitization of Migration and Refugee Women'* discusses the existing conflicts between the responsibilities of a state to protect refugee populations, and she also suggests emphasizing the securitization of migration.

V T Patil and P R Trivedi (2000) in the book *“Migration, Refugees and Security in 21st Century”* discussed the migration trends and refugee policies in Asia. This book also discussed the refugees and security in South Asian countries, with emphasis on the stateless Tamils in Srilanka and internally displaced persons in Bangladesh.

S D Muni and Lok Raj Boral in their book *“Refugees and Regional Security in South Asia”* stated that South Asia has within it a host of “push factors” which generate refugees, including inter-ethnic strife and religious fundamentalist. They emphasis on the case study of India, Bangladesh, Nepal, Bhutan, Afghanistan, Pakistan, Sri Lanka’s migrants and refugee problems. Satish Kantikar in his book *“Refugee Problems in South Asia”* examines the problems of South Asian refugees within the framework of international responsibility, solidarity and humanity. He has given the example of homelessness in Nepal, refugees in Pakistan and Bangladesh.

Dr Nishchal N. Pandey in *“Refugees and IDPs in South Asia”*, mentioned that refugees are recognized worldwide as one of the primary sources of war, famine, insurgency or inter-state warfare. These days they are widely regarded as a source of international terror networks and need to be stopped, controlled. Prof. Subramanyam Raju mentioned in his article *“Srilankan Tamil Refugees in India: Issues and concerns”*, that refugee problem varies from country to country and should be addressed in national level; in South Asia, the refugee flows threatened the stability of the region.

Nihar R Nayak, in *“Rohingya Refugees in India: Challenges and Resolutions”*, discussed the Rohingyas of Myanmar as the largest stateless people in India. The largest numbers of Rohingyas have been living in Jammu region and the Kashmir state of India. Since Rohingya migrants are spread across 11 states, Delhi has asked the provinces to keep a close watch over the Rohingyas to prevent Rohingya youth from the influence of radical Islamist organizations. Mohammed Nazmul Islam in his article, *“Managing the Rohingya crisis: Need for Increased Multi-Level Engagement,”* stated the problems in India, Bangladesh, Thailand, Indonesia, Malaysia and china. He suggested increasing multilevel engagement regarding this complex issue.

So, to maintain security of the state the threats that are coming from the illegal migrants or refugees should be considered seriously. Here we are going to focus on the refugee crisis situation in India and Bangladesh as well as how the refugee crisis threatens the security of these two countries. With the expansion of the concept of security, refugees today are regarded as a source of non-military threat to national security. Scholars and policymakers have devoted time and resources to the study of the refugee crisis and their situations on a humanitarian basis. Not much work has been done study the implications of the presence of the refugees on the security of the state that host them. So this study will be emphasized the major security threats for the host states linked with the refugees. And also shall try to suggest some resolutions that could be helpful for the host countries.

3. CONTEMPORARY SCENARIO

In the post-cold war era, as in the period after the first and Second World War, forced population displacements have proven to be a prominent consequence of the demise of old ideologies, the collapse of existing empires and the formation of new states. Large-scale displacement of people may also prompt other states and regional organizations to deploy their armed forces. Whether such action is taken with or without the consent of the country concerned and whether it is prompted by humanitarian or strategic considerations, it inevitably has an important impact on the local balance of political and military power (Patil 2000).

The recent refugee crisis in Europe was the worst crisis since world war two. Over millions of people crossed the sea. They arrived in Europe fleeing conflict, in the hope of starting a new life. But this refugee crisis leads the process of state insecurity in Europe and as a result, it impacts on the European Union. With Brexit, we can assume that the people are not ready to sacrifice their safety and security only for the humanitarian reason. In Germany also the overloaded refugee crisis started impacting negatively on Angela Marcel government. The economically rich countries condition is like this, so definitely the developing region like South Asia, the impact would be worse. As we all know that this region is one of the most populated and underdeveloped regions in the world. And in the case of refugee hosting after Turkey, Pakistan hosts the largest numbers of refugee populations (UNHCR 2015 midyear assessment).

The present scenario of the refugee problem in India and Bangladesh is going to be focused in this study. One state is big and economically growing and another one is small, middle-income developing country. Bangladesh is a refugee-producing as well as refugee hosting country. These two countries have some common security threat issue related to refugees like Bengali Refugee issues in North East India and the Rohingya refugees from Myanmar both in India and Bangladesh. The Rohingyas are stateless people and popular as 'Boat People' in media.

3.1 Rohingya refugees in Bangladesh and India

The Rohingya are concentrated in Rakhine (previously Arakan) State of Myanmar. However, under the 1982 Burmese Citizenship Law, the Rohingya were denied the right to claim Burmese citizenship. The government argued that the Rohingya were illegal migrants that only settled in the country during British rule, which justified the denial of their citizenship rights. Today, the Rohingya continue to face routine harassment at the hands of the Myanmar government, Arakan nationalist, and Buddhist extremists groups, despite the presence of an elected government in Naypyidaw and an improving human rights regime in Myanmar.

Even Aung San Suu Kyi, vaulted leader of Myanmar's democracy movement and supporter of minority rights, has been curiously silent on the Rohingya issue. Speaking out in favour of the Rohingya population would hurt her popularity with the majority Buddhist population, and would

also damage the shaky modus operandi she has managed to build with the current government. In light of these conditions, many thousands of Rohingya have been fleeing their birthplace.

(i) The Rohingya's in Bangladesh

Refugees International estimates that 29,000 Rohingya live in official refugee camps in Bangladesh, while another 200,000 are in unofficial camps, where they are categorically denied legal protections and humanitarian assistance. The majority of them live near Cox's Bazar, a city located on Bangladesh's southeastern coast. Despite close cultural and religious affinity, the Bangladesh government has been reluctant to take responsibility for the Rohingya issue. But the government cannot overlook the security threats that are coming from the refugee sides and affects the countries development. The major security threats that are imposed by the refugees are discussed below.

Economic threat

The current refugee flows in Bangladesh leads the economic crisis in the country. Because of the Rohingya people, the local people are suffering from unemployment. The refugees manage to get fake ID card and they are ready to give their service at a minimum cost. That effects on the economy of the country. Bangladesh has been facing the problems of the issue of Rohingya refugees since 1978. Though Bangladesh is not a part of 1951 convention, they allow and give assistance to refugees. There are about 1 million Rohingya in Myanmar who is denied citizenship. Hundreds of thousands have fled to Bangladesh, many of whom live in camps in Cox's Bazaar. The Bangladesh government has refused to grant refugee status to Rohingya arriving from Myanmar since 1992. with the passes of time the government of Bangladesh taken different initiatives regarding this issue. As a part of different initiatives, the current government approved 'The national strategy paper on Myanmar nationals in Bangladesh' on 9 September 2013 in the cabinet under the chair of the prime minister. The policy included five key elements: listing unregistered refugees, providing temporary basic humanitarian relief, strengthening border management, diplomatic engagement with the government of Myanmar, and increasing national level coordination. But as a developing country and already suffering from poverty and unemployed population the country cannot sacrifice its economic security of the people only because of a humanitarian issue and international pressure.

Drug & Human Trafficking

The border between these two countries is a major transit zone for methamphetamines from Myanmar. As example we can mention the incident of June 2015, when a member of the Border Guard Bangladesh was abducted by the Myanmar Border Guard Police and held for about 10 days in the camp before his unconditional release. Neither side explained much about the reason of the incident; many people in Dhaka were convinced that the abduction was probably tied to the involvement of the two border forces in the drug trade from Myanmar to Bangladesh.

Methamphetamine addiction is on the rise in Dhaka, even as millions of pills, locally known as yaba, are confiscated annually at the border.

And another security threat is human trafficking. Since 1996, human smugglers and traffickers have succeed in Teknaf and supported by huge profits. They have successfully created a recruitment network throughout the country. Recently, an associate investigation has obtained an inventory of human traffickers prepared by the police, which identify 230 top brokers throughout the country. From the native traffickers on the list 210 areas is primarily based in Cox's Bazar-Teknaf. In which 133 from Teknaf alone other 51 is from Cox's Bazar and 26 from PorirDwip. The remaining are from other districts of the country.

Internal security threat

The Rohingya militant groups are major security concerns for Bangladesh. Among the groups the ArakanRohingya Islamic Front (ARIF), Rohingya Solidarity Organization (RSO), Rohingya National Alliance (RNA) and ArakanRohingya National Organization (ARNO) these are considered to be the major threat imposing groups to Bangladesh's internal security. Because the groups having members, supporters and sympathisers within the Rohingya refugees and illegal migrants in Bangladesh. They have also collaborated with the Bangladeshi militant groups like the Harkatul Jihad al Islami Bangladesh.

Even though the Bangladesh army has almost totally disarmed the RSO by 2005, other Islamist, ethno-nationalist and narco-terrorist groups, such as the ARNO, RNA, the separatist Democratic Party of Arakan (DPA) and the narco-terrorist Arakan Liberation Party (ALP) are reportedly still around. The ALP often influence and sometimes forced Bangladeshi local communities into growing poppy in the interior of Chittagong Hill Tracts. The RSO and RNA are linked as a combined group with the DPA and beyond the control of the government of the respective country.

The Daily star (one of the leading newspaper of Bangladesh) reported that growing criminal activities of the Rohingya refugees in Cox's Bazar has become a major security issue for the local administration and people. Intelligence sources describe them as "security threats" for the country as the refugees are allegedly involving themselves with militant organisations operating in and outside the Bangladesh territory that dawn the country's image also. On 1 October 2012, Bangladesh Home Minister of that time, Mohiuddin Khan Alamgir accused the Rohingya of involvement in a series of attacks on minority Buddhist temples and homes in Ramu, Cox's Bazar. It is also believed that the recent terrorist activities in the country also linked with the refugees. And the most concerning issue is the spreading of the Islamic State. Experts warn that the terror group could be recruiting fighters from the Rohingya Muslims.

(ii) Refugees in India

In India, the present scenario of the refugee issue can be considered as the most liberal policy towards the refugees, although India became an executive member of the UNHCR only since 1995. India is the first choice of asylum seekers as well as refugees because of these liberal policies. India has one of the biggest refugee populations in South Asia. In the absence of any domestic law or regional South Asian framework, India has abstained from taking its rightful regional leadership role in this increasingly critical matter. Because of increasing flows of refugees, India is also facing internal security threats. India is hosting country for the refugees of Bangladesh, Myanmar, Sri Lanka, Afghanistan etc here we are going to focus on the Rohingya and Chakma refugees in India and how they are posing security threats to the country and what is the present situation.

Chakma refugees in India

The Chakma refugees came from the (Chittagong hill track) neighboring country Bangladesh. The history says, during the partition of 1947 this area was awarded to Pakistan. Later on, in 1962 the then Pakistani government builds the Kaptai Dam which imposed misery on the Chakma tribes. Due to flooding Approximately 40,000 Chakma lost their homes and farmland and immigrated to India as refugees. The Chakma Tribes settled in Arunachal and Assam Pradesh mainly. In September 2015 Indian supreme court directed the central government and the government of Arunachal Pradesh” to finalise the conferment of citizenship rights on eligible Chakma’s and Hajongs”. But this declaration of granting citizenship to all chakma and hajongs refugees can have a huge impact on specific state politics as well as the whole country.

Rohingya Refugees in India

As we discussed earlier the Rohingyas, an ethnic group from the Rakhine state in Myanmar, are one of the most persecuted groups in the world. Over 13,000 Rohingya refugees are registered with the United Nations High Commissioner for Refugees (UNHCR) in India They live in substandard conditions without any basic amenities, while their children cannot get admitted in schools due to lack of requisite documentation. Most men serve as daily wage labourers.

This is a common truth that most Rohingya who has migrated to other countries live in inhuman conditions. They have to deal regularly with security forces, the uneasy local communities. They are suffering from restricted access to food, drinking water, sufficient shelter, and clothing. And as a result of these circumstances makes them more easily targeted by criminal networks, illegal businesses, and Islamic fundamentalist groups like the Taliban, Lashkar-e-Taiba (LeT), Jama’atul Mujahideen Bangladesh (JMB), or Harkat-ul Jihad-al-Islami (The Diplomat).

So the present scenario of refugee imposed security threats for India also includes:

- The economic security threats.

- It can cause insurgency as local peoples are not welcoming them and government is trying to give them the registered facilities. Here we can say about the Chakma and Hajong issues that create the Arunachal local authority to challenge the Supreme Court ruling. And the violence may happen because of this issue. And Almost 5000 Rohingyas live in the settlement colonies of Rajiv Nagar and Kassim Nagar, in the Narwal area of Jammu. And the insurgency could be happened because of them too. Already this area is a source of conflict between India and Pakistan.

- State security is being challenged because there has been a constant fear of the Islamic State also known as ISIS and its influence on these refugees. The expanding influence of ISIS in India and its effort towards reaching out to young Muslims has put Indian state on high alert.

Although state security is threatened by the refugees in India, the country obliged to treat all persons living in its land equally as far as availing basic amenities and human rights and dignity are concerned. This obligation is rooted in Article 21 and 14 of the constitution, the supreme court has declared that these (apart from other constitutional rights) are applicable to everyone residing in India, not a merely citizen of the country (Velath and Chopra n.d.).

4. FINDINGS AND CONCLUSION

As this paper is based on the refugee induced security threats in south Asia especially Bangladesh and India, the main focus has given on the ground of state security instead of human security.

In the context of Bangladesh, the government is trying to resolve the problem by not accepting the Rohingya refugees. As we discussed earlier, because of these refugees the economy and internal security of the country is hampered. And it is also imposing a bad impression on the country image. Many western countries are blaming that there is a link of ISIS group with internal militant groups in Bangladesh. The government bound to give priority to its citizen's security. As a response to recent refugee crisis Bangladesh government refuge them to give shelter and as a result, they entered into India. International communities are not happy with this decision of government but what else the government can do? It has already overloaded population and poverty as well. If we are thinking this in our personal level as for example: if one had a house for five members but the person already has ten members of his/her own family. His/her neighbors are not in a good condition and they need shelter and other influential family and humanitarian bodies pressure the person to allow them to stay but there are no enough food facilities, as a result the neighbors' family members are capturing that person family members food and because of that the stability of the family is going to collapse. At that situation what will that person do? Is he/she is in a condition to listen to others or he/she will try to protect her own family?

According to scholars, there are both traditional and non-traditional security challenges that they are posing to Bangladesh. They are destroying forests, energy as well as environmental resources of the country. Therefore, the constant influx of Rohingyas in a densely populated country like Bangladesh is also already a big problem. Hence, some Rohingyas are being actively involved with Jihadist and terrorist organizations like Rohingya Solidarity Organization (RSO) who are posing security challenges for the country as well.

In India, the government is not so conscious about the state security issue. In the case of Bangladeshi Chakma refugees in Assam, the problem starts from the birth of the country Bangladesh. In Assam Accord we saw that there they talk about the citizenship and illegal migrants. The Assam Accord states that all those migrants who have come and settled in the state on 25 March 1971 shall be regarded as citizens. And those illegal migrants who are found to have arrived in the state after this date are not to be detected and expelled in accordance with the law. (Rani Pathak Das: Migration in Northeast India)

But still Bangladeshi refugees are coming and living in Assam and in Arunachal Pradesh the central govt and Supreme Court granted the illegal refugees as citizens and the local people are not happy with this. Here also the research findings are limited to the different views between government and the local peoples as the government accepting the illegal migrants as tools of their secular or neutral point of view and local people are opposing as these illegal refugees hamper their earnings and local politics also.

And in the case of Rohingyas in different parts of India, the government is not giving that much of importance. But these Rohingya illegal migrants could be a great threat to the state security. As they are the victim of violence in their own country and then most of the time they are refused to get in into Bangladesh and then they come to India. Everywhere they are unwelcomed and because of that, they are becoming the target of different radical groups and terrorists.

In Jammu Kashmir's winter capital the illegal migrants of Myanmar taking shelter. Chief minister Mehbooba Mufti told the state assembly this June that about 13,400 Myanmarese and Bangladeshi migrants are living in camps in Jammu. In a report of The Hindustan Times, 4 Dec 2016: The highest number of Rohingya migrants, 686 in total lives in Bathindi Ka Plot. Vikas Swarup, Ministry of External Affairs Spokesperson told to The Quint on June 19, 2016, that, The Indian Government is concerned about the Rohingyas at a humanitarian level.

According to reports, Pakistan-based militants were exploiting radicalisation among the Rohingya community, which posed a security threat to the country as well as the region. India got inputs from Bangladesh and suspected that Rohingya radicals and Lashkar had a hand in the blasts that rocked Bodh Gaya, Buddhism's holiest site.

India's approach of silent pragmatism may have its limits. Constantino Xavier of Carnegie India argues that "A new Muslim militant minority across India's eastern border poses a severe

security threat to the stability in Bangladesh and, in turn, across Assam and northeast India. Several thousands of Rohingya refugees already reside in India and with support from activists they could disrupt Delhi's relations with Myanmar in the same way Burmese pro-democracy activists in India irritated bilateral relations in the 1990s." He strongly advocates a policy that crafts a fine balance between keeping Myanmar engaged and nudging Aung San Suu Kyi to pursue credible conflict resolution mechanisms. For India, silence may not be sustainable.

Suggestions and the Way Forward

Rohingya issue creates the security threats for both countries so there should be some combined steps from both sides of the governments to tackle this problem. 12 July 2016 the ministry of home affairs: India, conduct a meeting with five bordering states on Indo-Bangla border regarding the illegal refugees and drug-human trafficking. But the government level meeting should be held in between India and Bangladesh. Here is some resolving measure suggested which could be helpful to tackle the refugee induced security threats.

Registration Process: Although in both countries UNHCR is there to register the refugees but there is a lack of governmental initiative. When insurgency or any kind of terrorist activities happens then with that registration paper the fact could be cleared about the linked groups.

Prioritize the security concerns of the state: As Bangladesh and India share Borders and historically linked with each other, the refugees are quite similar in physical and ethnic character. So it is really difficult to differentiate between North Eastern Indian and Chakma refugees from Bangladesh. The government of India has a warm relation with Bangladesh Government and they both can discuss this issue because these refugee's are creating political and social instability in the hosting country.

Pressurize Myanmar Government: Because of persecution in Myanmar, these Rohingya's are seeking the safe place in India and Bangladesh mostly. With international community, the Bangladesh and Indian government should also need to pressurize Myanmar government to stop the persecution against Rohingya Muslims. As this persecution breeds haters and terrorism. Extremist groups are taking this advantage and recruiting them to fulfill their activities.

Non-State actors Involvement: Non-state actors like UNHCR and regional organization SAARC can play a positive role to strengthen the security of the hosting country. They can work jointly with the hosting country to resolve the refugee induced problems. The UNHCR only considering the problems that refugees are facing in hosting countries, they should also discuss with the host countries government regarding the threats from the refugees. They are spending money for the refugee's welfare its true but the hosting country also has to bear the food, political, economic security threats from the refugees. So these issues should be highlighted for the sake of preserving state security and interests.

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Push factors and Identity Issues of Internal Migrants of Northeast India in Kerala

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Abstract

In the last few years, Kerala has witnessed a huge influx of migrant labour from different parts of the country, especially from Northeast India. Despite the high unemployment rate in the state, the influx continues due to higher wages for unskilled labour, large opportunities for employment and shortage of local labour. Though migrant workers from Northeast India enjoy high wages in comparison to their own home states and contribute to socio-economic growth and infrastructural development of Kerala, the real reasons behind Kerala becoming their preferred destination for work has not been examined much. It is notable that a region less known for its ethnic, cultural and linguistic richness but disreputable for conflicts and human rights violations, has become one of the major sources of Kerala's migrant workers. An examination of the push factors of migration, from the four Bodoland area districts, along with the heterogeneous, ethnic and demographic composition of Northeast Indian people – which constitutes a large chunk of Kerala's migrant workers, often overshadowed by the collective nomenclature of 'Bengali Bhai' – would be of significant interest, to understand what attracts them to the 'Kerala model of development' even at the cost of their own identity, something they strongly protect in their home state. This article examines these factors.

Key Words: Internal Migration, Kerala, Northeast India, Identity Issues, Migrant Workers Rights

1. INTRODUCTION

Internal Migration is a multi-factor driven phenomenon that happens mostly due to marriage and employment and shapes the socio-cultural and economic aspects of the societies of origin and destination. It includes both permanent and temporary migration, apart from rural to rural, rural to urban, urban to rural and urban to urban migrations. However, it does not include forced removal and relocation of people under development and social engineering programmes, trafficking and slavery, or displacement by war and civil unrest. The most common reason for women's migration from one place to another is marriage, while for men it is labour. Family business and education are

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also major migration factors. Migrants undergo new labour market experiences in the new place and face the litmus test in terms of cultural integration. Despite better economic packages, migrants may face a range of challenges, beginning with learning new languages and meeting the basic needs within the income limit, such as accommodation, social services, health facilities etc. Though many societies understand the need for migrants – for their economic activities and social development – they often treat them as second-class citizens and do not want to integrate them into the society, fearing that they will threaten the local culture.

Internal migration has become imminent for the world's poor, because of the rapidly changing economic, social and natural resources, as economic opportunities expand in some areas (through urbanization, manufacturing, commercial farming and increasing rural-urban wage differentials) and shrink in others (especially in overpopulated, drought-prone areas where environmental, technical, land size and investment limits have been reached). Globalization is an important force in both the expansion and contraction of economic opportunities that drive migration. The major trends of internal migration in India emerge from urbanization. A comparison of the last two censuses (2001 and 2011) show that India's urban population has grown from 28% to 31%. Besides natural population growth, a significant portion of this population constitutes the people who migrate from rural areas to urban centres in search of jobs.

Despite India's economic growth over the last 30 years, 29.8 percent of all Indians lived below the poverty line and 33.8 percent of rural Indians lived below the national rural poverty line in 2010. Though wage and education gaps between rural and urban Indians are narrowing down, India's villages are typified by agrarian distress, lack of employment, and farmer suicides. Thus, the rural-urban divide has been one of the primary reasons for India's labour mobility. Despite overwhelming evidence that internal migration can lead to the accumulation of household wealth as well as positive changes in both sending and receiving areas, it continues to be viewed as an economically, socially and politically destabilizing process by policy makers, bureaucrats, academics and even NGOs. One reason for it is that, migration is an administrative and legislative nightmare. It crosses physical and departmental boundaries, confusing rigid institutions that are not used to cooperating with each other. Another reason is that many researchers and NGOs continue to take an old-fashioned position that migration through intermediaries, for work in the informal sector, cannot be anything but exploitative and impoverishing. They are thereby, further perpetuating myths about the causes and effects of migration.

But, it does not signify that there are no other causes. For instance, the feeling of insecurity in the birthplace, influence of friends, better wages in destination places, informative network etc., are instrumental in driving migration. But, do they (internal migrants in India) really enjoy better and sufficient economic benefits out of their work contribution, to satisfy their basic economic needs for survival? Do they feel threatened for their right to life in the destination places? For instance, various factors often threaten the life of masses including migrant workers in Northeast India. But, are the lives of Northeastern migrant workers in Kerala as threatened as they were in

Northeast? It must be noted that there are reports concerning ill treatment of migrant workers in the state.

2. BACKGROUND OF THE STUDY

Human migration is usually understood as the movement of people to a new area or country with an aim to find work or better living conditions. Scholars as well as experts have defined it differently, based on their understanding. According to Hagen Zanker (2008) "migration is the temporary or permanent move of individuals or groups of people from one geographic location to another for various reasons ranging from better employment possibilities to persecution". Lee (1966: 49) says that migration is defined broadly as a semi-permanent or permanent change of residence without distinction between external and internal migration. Joseph (1988) says that the term migration encompasses a wide range of patterns; where, from the geographical point of view, migration may involve movement of people from one place to another within the country or from one country to another country. Further, based on the duration, Joseph classified migration into two: permanent migration and short-term migration. This migration can broadly be divided into two categories i.e. international migration and internal migration.

The report of UNFPA (2013) states that international migration is an integral aspect of the global developmental process, where migrants play a vital role in promoting development as well as reducing poverty in countries of origin, while contributing towards the prosperity in countries of destination. Likewise, internal migration is also an important element, where migrants help in the development as well as in declining poverty of the origin state, including the development of destination place. Most importantly, migrants send their incomes to their families in the form of remittances, which help their families and indirectly, their origin place too (Jason de Parle, 2007).

Various factors contribute in this process of migration, whether they are push factors, pull factors or sometimes both. Usually, migration takes place due to globalization, which aids in providing easy access to information, quick communication, low cost of travelling, better wages and demand of workers in the destination places, adequate economic needs for survival, and even conflicts (UNFPA, 2004). The report entitled *Monitoring of Population Programmes, Focusing on New Trends in Migration: Demographic Aspects* (2013) states that globalisation of market, shortage and surplus of labour, easy transportation and communication as well as conflict have contributed to migration flows in present day world. Lee (1966: 49-50) argues that migration takes place mainly due to factors, which are associated with the areas of origin as well as destination, intervening obstacles as well as personal factors.

Besides, the difference in income level as well as employment opportunities and peoples' analysis of profit and loss of the migration also constitute the most important causes of migration. In the near future, rapid increase of population in developing societies may also become one of the major factors of migration; particularly, in case of unskilled workers' migration. Gugler (1996) says

that the decision of labour migration depends on a comparison, particularly of economic opportunities, between the point of departure and destinations. He further says that till now, in less developed countries, labour migration mostly originates in rural areas i.e. either intra-rural or rural to urban. It could be so, because of less job opportunities in rural areas and more in urban areas. According to Wickramasekera (2002), labour migration takes place due to economic and non-economic factors such as search for a higher income, influence of friends, relatives and social networks, search for adventure, exploration and curiosity and escape from persecution and armed conflict etc.

Jennissen (2007) states that different theories of migration provided diverse reasons for migration of workers. The Neoclassical Economic theory says that wage difference between places is the main reason for labour migration, which is again due to the geographical differences in labour demand and labour supply. The Dual Labour Market theory argues that international migration is caused primarily by pull factors in the developed migrant-receiving countries. The Relative Deprivation theory states that awareness of other members in the destination place or the sending society, about income differences, is an important factor with regard to migration. The New Economics of Labour Migration approach states that the labour migration pattern cannot be explained solely at the level of individual workers, but wider social entities such as the household.

According to Joseph (1988), the Marxian approach considers that the pauperization of the working class, as a result of capitalist expansion, is the basis of all forms of migration. Wickramasinghe and Wimalaratana (2016) say that “the core assumption behind the migration system theory is that migration contributes to change the economic, social, cultural and institutional conditions in both the receiving and sending country”. Particularly, push factors such as unemployment and low wages in the place of origin and pull factors such as working opportunities and worker recruitment, and network i.e. information concerning job opportunities and wages in the place of destination, play an important role in regard to workers’ migration.

Presently, international migrants have increased more than ever before (Table No. 1), which can be linked with development, poverty as well as with human rights. Migration has risen tremendously due to globalisation, contributing to the source and destination places in different ways; particularly to the economy of source area and development of the destination place. However, it is not free from exploitation. Koser (2007) says that historically, migration has strengthened economic growth and nation building and has enriched cultures, but somewhere along the way, migrants are exploited and their inalienable rights are abused. On the other hand, while integration may become difficult for migrants in destination countries, migration may deprive origin countries of important skills. Koser also mentions that the history of migration begins with the origins of mankind in the Rift Valley in Africa, from where, between about 1.5 million and 5000 BC *Homo erectus* and *Homo sapiens* spread initially into Europe and later into other continents. Probably the predominant migration event in the 18th and 19th centuries was the forced transportation of slaves.

Table No. 1**International Migrant population 1970–2005 Region wise, (in Millions)**

| Year | 1960 | 1970 | 1980 | 1990 | 2000 |
|-------------------|-------------|-------------|-------------|-------------|-------------|
| World | 75.9 | 81.5 | 99.8 | 154.0 | 174.9 |
| Developed | 32.1 | 38.3 | 47.7 | 89.7 | 110.3 |
| Developing | 43.8 | 43.2 | 52.1 | 64.3 | 64.6 |

Source: UNDESA (2004).

The rapid increase in international migration is also taking place due to various factors such as affordable cost of transportation, necessity of workers in developmental activities, easily accessible information concerning work opportunities and countries encouraging migration. Juss (2006) says that international migration has been hastened by the reduction in the cost of international movement and the spread of international communication media. Koser (2007) says that the demand for foreign labour (especially in more developed countries), countries extending the right of family reunion to migrants and trafficking of women into the sex industry (particularly in Asia), have contributed to this kind of migration. According to Gulati (2006) the Asian women workers migrate due to the demand for women entertainers in Japan, demand for migrant women from the Asian Tigers, necessity of workers in Middle Eastern countries, and encouragement of women workers in many countries, etc.

Workers' migration takes place for other reasons as well. In the 1970s, when oil prices hiked, there was a requirement of various kinds of workers in the developmental projects of Gulf countries, which was filled by the Asian and South Asian migrant workers. Abrar (2011) says that the Bangladeshi migrants among all the workers in the Gulf countries, particularly faced severe issues such as lack of reliable sources of information about work opportunities, dependency on intermediaries, loss of their personal documents to their employers, non-placement of job promised, non-payment and irregular payment of wages, poor living and working conditions, inadequate health care facilities etc. Gulati (2006) has also observed the situation of immigrant domestic workers and according to her, they are bound to live with employers and depend on them for basic needs like food and shelter. Besides, most of these labour-importing countries do not have labour laws that can protect domestic work. The migrants therefore face economic exploitation in the hands of the middle-men and others.

Networking with friends as well as family, plays a vital role in migration, because migrants usually move to countries where they have their friends, family etc. These channels, which may be termed as migration networks, are the reason why migration is increasing everyday. These migration networks convey information, provide assistance (particularly financial) and facilitate employment, accommodation and different kinds of support (Arango, 2000). According to Massey *et al.* (1993) “migrant networks are sets of interpersonal ties that connect migrants, former migrants, and non-migrants in origin and destination areas through ties of kinship, friendship, and shared community origin”.

Anh (2003) concludes that migration is a driver of growth and an important route out of poverty with significant positive impact on people's livelihoods and well-being and that attempts to control mobility will be counterproductive. Afsar (2003) also argues that migration has reduced poverty directly and indirectly in Bangladesh, as remittances have expanded the area under cultivation and rural labour markets, by making the land available for tenancy. Ping (2003) draws attention to the huge contribution of migrant labour to overall development in China and says that “without migrants there would be no Beijing, Shanghai, Guangzhou or Shenzhen”. The potential of migration is also attracting attention in Latin America. Andersson (2002) argues that rural-urban migration can bring many benefits to Bolivia, where low population density, poverty and a mountainous terrain make it expensive and difficult to provide services in rural areas.

3. MIGRANT WORKERS IN INDIA: NORTHEAST INDIAN LABOURERS IN KERALA

Migration is common in India too and it continues in different forms within the district, the state and the country. It is completely legal for Indians to migrate to any other part of their own country, irrespective of social, political, economic or environmental reasons. Students, households, workers etc. are some of the highest number of migrants with varying causes for migration. For instance, students migrate due to lack of or in search of better institutions for higher studies. The causes of population migration in India may vary, based on the migrants' last residence. But among these causes, marriage has often been one of the most dominant factors for female migration, followed by households and others. Among males, work or employment is the main reason for migration (Table No. 2). According to Sharma (2010) economic, social, environmental and political factors are some of the push factors of population movements in India. Besides, serious abuse of human rights also causes people to leave their homes and families, in search for safety, security and a sustainable livelihood.

Table No. 2
Causes of Migration in India³

| Reasons for migration | Number of Migrants in Million | | | Percentage to total Migrants | | |
|-----------------------------|-------------------------------|--------|---------|------------------------------|--------|---------|
| | Male | Female | Persons | Male | Female | Persons |
| Work/ Employment | 25.8 | 3.6 | 29.4 | 28.5 | 1.7 | 9.5 |
| Business | 2.3 | 0.4 | 2.7 | 2.6 | 0.2 | 0.9 |
| Education | 2.3 | 0.9 | 3.3 | 2.6 | 0.4 | 1.1 |
| Marriage | 2.1 | 153.3 | 155.5 | 2.4 | 70.1 | 50.3 |
| Moved after Birth | 9.2 | 6.5 | 15.7 | 10.2 | 3.0 | 5.1 |
| Moved with Household | 17.0 | 23.9 | 40.9 | 18.9 | 10.9 | 13.2 |
| Other | 31.6 | 29.9 | 61.6 | 34.8 | 13.7 | 19.9 |
| Total Migrants | 90.6 | 218.7 | 309.3 | 100.00 | 100.00 | 100.00 |

Source: Census 2001 (Government of India), cited in Bhagat (2011).

India has a surplus of workers in the country, in comparison to other countries. They can be classified as organised and unorganised. According to the Annual Reports (Ministry of Labour and Employment, Government of India) the strength of workers was 45.9 crore in 2004-05 (out of which 2.6 crore was organised and 43.3 crore was unorganised) and 46.5 crore in 2009-10 (out of which 2.8 crore was organised and 43.7 crore was unorganised).

Table No.3
Strength of workers in India (in crore)

| Sl. No. | Workers | 2004-2005 | 2009-2010 |
|---------|-------------|-----------|-----------|
| 1 | Organised | 2.6 | 2.8 |
| 2 | Unorganised | 43.3 | 43.7 |
| 3 | Total | 45.9 | 46.5 |

Sources: Ministry of Labour and Employment, GoI. Annual Reports.

In India, migration of workers happens, particularly due to the lack of sufficient working opportunities, better wages and search for safe working places. According to the Economic Survey Report 2016-17 (Government of India) the annual work-related migration in India is around 9

million i.e. based on railway passenger traffic data. Considering the 2011 Census, the annual inter-state migration between the 2001 and 2011 was about 5-6.5 million only.

In the context of Northeast India, Singh(2013) says that while labour outmigration from the region is a recent phenomenon, in general, migration has been happening due to the lack of educational as well as employment opportunities, political instability and availability of better career opportunities in major cities of the country. Chyrmang (2011) also says that outmigration from the region takes place due to work or employment, business, education, marriage, change of residence after birth, change of residence with household and others (Table No. 4). Accordingly, the major states receiving migrants from the region are Andhra Pradesh, Bihar, Delhi, Karnataka, Kerala, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal (Table No. 5). But the data also shows that Bihar, Delhi, Uttar Pradesh and West Bengal are the highest migrant receiving states. Furthermore, Table No. 5 shows that among the major migrant receiving states, Kerala receives the least number of migrants. But out of the total population of migrant workers in the state of Kerala, almost 18 percent is from the state of Assam. Kerala is therefore, both, a source and destination of migrant workers.

Table No. 4
Reasons for Total Out-migration from the Northeastern Region (in percentage)

| Reasons→ States ↓ | Work/ Employ ment | Business | Education | Marriage | Moved after Birth | Moved with Household | Others |
|--------------------------|-------------------------|----------|-----------|----------|-------------------------|----------------------------|--------|
| Sikkim | 16.05 | 1.79 | 5.95 | 22.94 | 1.68 | 27.97 | 23.63 |
| Arunachal Pradesh | 13.84 | 1.26 | 8.98 | 21.01 | 1.93 | 27.72 | 25.27 |
| Nagaland | 8.10 | 0.56 | 1.91 | 60.42 | 0.80 | 13.55 | 14.67 |
| Manipur | 18.62 | 2.46 | 14.87 | 13.73 | 1.11 | 28.45 | 20.76 |
| Mizoram | 5.55 | 0.44 | 4.01 | 3.77 | 0.41 | 23.96 | 61.85 |
| Tripura | 15.82 | 6.34 | 3.52 | 22.68 | 1.19 | 30.77 | 19.68 |
| Meghalaya | 17.15 | 2.46 | 3.57 | 23.42 | 1.80 | 32.89 | 18.70 |
| Assam | 16.20 | 2.54 | 1.53 | 36.54 | 1.20 | 23.99 | 18.01 |

Table No. 5
Percentage Distribution of Out-migration

| Sending States Receiving States | Sikkim | Arunachal Pradesh | Nagaland | Manipur | Mizoram | Tripura | Meghalaya | Assam | Total NER |
|------------------------------------|--------|-------------------|----------|---------|---------|---------|-----------|-------|--------------|
| Andhra Pradesh | 0.98 | 5.42 | 0.08 | 2.03 | 0.87 | 0.69 | 2.60 | 0.63 | 0.70 |
| Bihar | 6.46 | 23.11 | 74.09 | 2.45 | 6.23 | 2.61 | 1.85 | 28.60 | 34.54 |
| Delhi | 13.44 | 16.15 | 12.75 | 25.51 | 34.43 | 7.98 | 31.44 | 5.74 | 8.95 |
| Karnataka | 9.21 | 11.13 | 0.32 | 6.71 | 5.46 | 2.03 | 3.25 | 0.89 | 1.38 |
| Kerala | 0.72 | 1.94 | 0.21 | 1.07 | 1.82 | 0.34 | 0.88 | 0.25 | 0.33 |
| Maharashtra | 4.92 | 5.24 | 0.42 | 9.99 | 11.29 | 4.36 | 7.46 | 3.11 | 3.07 |
| Rajasthan | 2.22 | 1.60 | 0.16 | 4.64 | 1.56 | 2.48 | 2.85 | 1.59 | 1.48 |
| Tamil Nadu | 1.35 | 5.27 | 0.13 | 2.70 | 3.10 | 0.45 | 0.82 | 0.45 | 0.57 |
| Uttar Pradesh | 2.19 | 5.68 | 5.81 | 20.34 | 6.29 | 6.16 | 3.90 | 20.27 | 15.91 |
| West Bengal | 46.20 | 8.57 | 1.03 | 8.84 | 8.48 | 62.07 | 29.35 | 29.08 | 23.92 |

Source: Census 2001 (Government of India), cited in Chyrmang (2011).

The Northeastern states of India, particularly Assam and its BTAD (Bodoland Territorial Areas District) area are hardly free from violence and ethnic conflicts caused by numerous groups fighting for separate states as well as sovereign states. The existence of armed groups such as ULFA (United Liberation Front of Asom), NDFB (National Democratic Front of Boroland), BLTF (Bodo Liberation Tiger Force) etc., has been creating fear in the minds of the people for years, leading to a lack of peace in society. On 15th August, 2004 ULFA bombarded a school of Dhemaji (Assam) killing 18 people and injuring many others, with most of the victims being school children aged between 12-14 and their mothers (BBC News 2004 Talukdar, 2004). On 30th October, 2008, Assam witnessed serial bomb blasts by NDFB (Ranjan) in different places (Guwahati, Barpeta Road, Bongaigaon and Kokrajhar) where a number of innocent people lost their lives and many people were injured. 30th October is now observed as *Black Day* in the state (Choudhury, 2010; The Shillong Times 2011). On 17th January, 2014, passengers of the night-super bus *Swapna* was attacked by suspected NDFB (Songbijit) at Athiabari under Serfanguri Police Station where four out of five Hindi-speaking people were shot dead and others, seriously injured (Choudhury, 2014). On 23rd December 2014 NDFB (S) killed Adivasi people in Kokrajhar, Chirang and Sonitpur. Later, many Bodo people were tortured by security forces due to the launch of *Operation All Out* in search for the linkman of the suspected attack. Many merciless beatings, some of which even led to death, went unreported. What is unfortunate for the Bodo community is that in the name of armed groups, the term *Bodo militant* has been used to link regular people with many NDFB attacks (Bhattacharjee, 2014). In 2016, another incident took place at Balajan Tinali, Kokrajhar where 13

civilians (mostly Bodo) lost their lives and another 19 people were seriously injured (Pisharoty, 2016; Talukdar, 2016). In a very recent incident, unidentified assailants gunned down a minority student leader named Lafikul Islam in Kokrajhar. Such an environment is challenging for peaceful living.

In response to these armed group attacks, the successive governments have installed draconian laws like AFSPA (1958), which in turn, have led to huge human rights violation in the region, instead of ensuring security to the people. Most importantly, a large number of innocent people have lost their valuable lives and many others have been displaced, due to ethnic conflicts in the BTAD region (Table No. 6). Governments have repeatedly failed to tackle the issue either because of ignorance or negligence.

Table No. 6
Major Ethnic Conflicts in BTAD

| Year | Incident/Conflict | Death toll (Approximately) | Number of Displaced Persons (Approximately) |
|------|-------------------|-------------------------------|---|
| 1993 | Bodo-Muslim | 50 | NA* |
| 1994 | Bodo-Muslim | 100 | |
| 1996 | Bodo-Santhal | 200 | 200000 |
| 1998 | Bodo-Santhal | 50 | 80000 |
| 2008 | Bodo-Muslim | 70 | 100000 |
| 2012 | Bodo-Muslim | 100 | 400000 |
| 2014 | Bodo-Santhal | 80 | 300000 |

Sources: Brahma (2016).

Besides, the question of survival of the migrant workers as well as Hindi speaking people is also critical in the region. Misra (2007), through his work entitled *Targeting the Innocent in Assam*, provides a gloomy picture of migrant workers and Hindi-speaking, petty tradesmen in the state of Assam; particularly in Tinsukia, Dibrugarh, Sivasagar and Golaghat districts. He highlights mainly, how they are being attacked and made the soft target of ULFA. Six Hindi-speaking migrant workers were killed by ULFA in 2007 (BBC News, 2007). Similarly, eight Hindi-speaking migrant workers of two different families were killed and three were seriously wounded in Assam due to the attack carried out by the outlawed ULFA and the Karbi Longri National Liberation Front (News18 2007). In 2008, 14 migrant workers, who were mostly from Bihar, were gunned down by militants in Manipur (The Shanghai Express 2008). In the same year, unidentified gunmen in Thoubal

district of Manipur killed four migrant workers (The Shangai Express 2008). Then again, eight coal miners were killed and three were wounded in an attack by a group of unidentified assailants in Garo Hills, Meghalaya which further spooked migrant coal miners working in South Garo Hills District and made them flee to their respective homes for safety (IANS, 2013). This state of insecurity and fear is one of the most important push factors of migration from this region to other states including Kerala, popularly known as Gulf of the migrant workers. The main reason for workers' migration to Kerala is however, the access to better wages (Table No. 7 & 8) in comparison to other states of India, and communication with friends working in the destination state.

Table No.7
Rate of minimum wages for unskilled workers in the states of Northeast India (in Rs)

| Sl. No. | Central/States/ UT | 2009-2010 | 2011-2012 | 2012-2013 | 2013-2014 |
|---------|--------------------|--------------|---------------|---------------|---------------|
| 1 | Central | 78.00–186.00 | 156.00–256.00 | 166.00–279.00 | ----- |
| 2 | Arunachal Pradesh | 55.00 | 134.62–153.85 | 134.62–153.85 | |
| 3 | Assam | 54.80–79.60 | 66.50–100.00 | 100.42 | 165.41–263.82 |
| 4 | Manipur | 72.40 | 122.10 | 122.10 | 122.10–132.60 |
| 5 | Meghalaya | 70.00 | 100.00 | 100.00 | 100.00–140.00 |
| 6 | Mizoram | 103.00 | 132.00 | 170.00 | 170.00–300.00 |
| 7 | Nagaland | 66.00–70.00 | 80.00 | 100.00 | 100.00–130.00 |
| 8 | Sikkim | 100.00 | 100.00 | 130.00 | 200.00–290.00 |
| 9 | Tripura | 62.00–98.08 | 65.77–130.00 | 96.15–132.69 | 53.00–349.25 |

Source: Ministry of Labour and Employment, GoI. *Annual Reports*.

Table No.8
Minimum wage rate for unskilled workers in some of the major states of India (in Rs)

| Sl. No. | Central/States/ UT | 2009-2010 | 2011-2012 | 2012-1013 | 2013-2014 |
|---------|--------------------|--------------|---------------|---------------|---------------|
| 0 | Central | 78.00-186.00 | 156.00-256.00 | 166.00-279.00 | ----- |
| 1 | Andhra Pradesh | 58.25-163.00 | 68.96-153.85 | 69.00-231.71 | 58.00-474.31 |
| 2 | Bihar | 75.00-89.00 | 138.00-144.00 | 138.00-144.00 | 162.00-260.00 |
| 3 | Delhi | 142.00 | 234.00 | 279.00 | 279.00-369.00 |
| 4 | Karnataka | 73.96-133.10 | 82.57-227.89 | 130.08-220.73 | 114.23-280.34 |
| 5 | Kerala | 72.00-328.80 | 110.00-322.10 | 85.20-353.00 | 107.04-483.00 |
| 6 | Maharashtra | 46.13-201.30 | 95.65-248.15 | 100.00-248.15 | 100.00-359.85 |
| 7 | Rajasthan | 87.81-100.00 | 135.00 | 147.00 | 166.00-236.00 |
| 8 | Tamil Nadu | 57.94-158.70 | 81.91-222.35 | 88.29-222.35 | 85.00-273.36 |
| 9 | Uttar Pradesh | 76.31-115.87 | 100.00-160.15 | 100.00-171.20 | 100.00-209.44 |
| 10 | West Bengal | 57.01-126.42 | 112.50-146.53 | 112.50-169.30 | 112.50-205.77 |

Source: Ministry of Labour and Employment, Government of India Annual Reports.

4. INTER STATE MIGRANT WORKMEN REGULATION OF EMPLOYMENT AND CONDITIONS OF SERVICE ACT 1979

As per the provisions of the Act, the contractor has to obtain a recruitment license from the state from where the workers are recruited (Original State) and an employment license from the state where they are employed (Recipient State). Accordingly, the contractor and the principal employer become liable for ensuring the provisions envisaged in the enactment, as an immediate employer and the principal employer respectively. But, usually, these workers cannot be brought under the purview of the enactment, due to lack of statutory ingredients required to attract the ambit of the enactment, such as an intermediary third party/contractor between the principal employer and the workmen. These workers are compelled to live in groups, in unhygienic conditions near their working place without proper health facilities.

As may be seen, out of the total Inter State Migrant (ISM) workers, 46 per cent are from West Bengal, followed by Orissa (15%) and Assam (11%). The distribution of district-wise migrant workers in the state shows that Ernakulam has the highest percentage (17%), followed by Wayanad (13%) and Kannur (11%). These ISM workers are engaged in different areas such as agriculture, construction, hotels and restaurants, manufacturing and trade. It is seen that 60 per cent of the migrant workers are engaged in the construction sectors, eight per cent in manufacturing, seven per cent under hotels and restaurants, two per cent each under trade and agriculture and the remaining 21 per cent under other activities.

Among all the states of India, Kerala has a unique character in relation to workers' migration i.e. as source as well as destination of migrant workers. Though one cannot state the exact number of Indians working abroad, the state of Kerala easily has the highest number of emigrants in the Gulf countries (Rajan and Zachariah, 2010). The number of Kerala emigrants living abroad is increasing with the passage of time. It was 1.36 million in 1998, 1.84 million in 2003, 2.19 million in 2008 and 2.28 million in 2011. The Kerala migrants living in other Indian states also increased between 2008 and 2011. It was 914,000 in 2008 and 931,000 in 2011 (Zachariah and Rajan, 2012). Most recently, in 2014, the number of Kerala emigrants living abroad has been estimated as 2.4 million (24.0 lakh) and the Kerala migrants living in other states in India as 700,342 (Zachariah and Rajan, 2015). The official data says that the total stock of Indian emigrants in the Arab region in the year 2000 was estimated to be about 30.7 lakhs, of which about 10 lakhs are reported to be in United Arab Emirates (UAE). By 2001, the total stock of Kerala emigrants in UAE was about 5 lakhs in the year 2001 (Zachariah, *et al.*, 2002).

Presently, the state of Kerala also has home-returned emigrants who have now turned old, with an average of forty plus years of experience; a few of them, too old and sick to work. Notably, a majority of them have relatively low level of education, including technical education, which underlies the problem of their rehabilitation (Zachariah, *et al.*, 2001). Zachariah *et al.* (1999) state that "socio-economic and demographic factors lead to emigration and out-migration; emigration and out-migration lead, in turn to remittances; remittances cause social and economic changes; and these changes in the next move, become factors promoting migration. The process goes on in cycles. Remittance, in this sense, is an intermediate determinant of the consequences".

Though the migration of Keralites to various places contributed to the development of Kerala, reducing unemployment in the process, it also led to the emergence of workers' shortage in the unorganised sector and increase of wages, which caught the attention of workers from other states. Thus, began the era of replacement migration in the state. For this reason, Kerala has now become the 'Gulf' for workers of other states, according to Zachariah and Rajan (2005). The migrant workers from Kerala can therefore be considered responsible for converting the state into a 'Gulf' for migrant workers from other Indian states as much as from Kerala. Since these migrant workers accept low wages and poor living conditions, they have been taking away lots of work, which could otherwise have gone to the workers originally from Kerala (Zachariah and Rajan, 2004). It is to be noted, however, that the point made by Zachariah and Rajan about migrant workers accepting low wages may be true only from the perspective of Kerala. In comparison to wages earned in other states, migrant workers actually get high wages in Kerala (Table No. 7 & 8). Aswathy M J (2015) agrees to the same point of view. Besides, due to the outmigration, nearly a million married women are living away from their husbands (Zachariah *et al.*, 2000). Kerala has been becoming very dependent on the migration of people in many areas such as employment, sustenance, and housing, including household facilities. Internal migrant workers are filling the gap left by Malayali workers, constituting approximately 2.5 million of the population. They are engaged in manual work, including construction sectors. Among the workers

of different states, approximately 75% workers are from West Bengal, Bihar, Assam, Uttar Pradesh, and Orissa (PTI, 2013). Saikia (2008) agrees that the pull factors for labour migration to Kerala are the same, but he includes that the push factors are not just about poor economic condition and low wages in their native regions, but also the need of repayment of debt, the need to purchase land as well as build a house. Nitha SV (2015) points out that workers came to Kerala from different states as much due to higher wages as fear of armed groups (particularly in the state of Assam) and the unwillingness of the Keralites to do job in hotels etc. People in Kerala are all looking for white collar jobs and this results in shortage of labourers. Migrant workers are therefore becoming the backbone of the state's current growth (Ravindranath, 2015).

Ilankath (2016) says that as per the government records, there are 1,49,285 migrant laborers in Kerala but the Gulati Institute of Finance and Taxation (GIFT) puts the number at around 25 lakh. The state of Kerala has migrant workers from India as well as from Nepal. The majority of the workers are from West Bengal (20%), Bihar (18.10%), Assam (17.28%) and Uttar Pradesh (14.83%). Low level of wage, lack of available employment opportunities and the increasing unviability of the agricultural sector and its seasonal nature, have prompted most of migrant workers of Assam, to seek employment in Kerala. The workers come through various channels such as a relative, friend, contractor and others. The workers from Assam in Kerala came firstly in the late 80s and early 90s to work in wood industrial units of Perumbavoor, but when the construction boom started in the mid-90s, many of them moved to construction sector, because of better wages (Narayana et al 2013).

In Kerala, mostly the migrant workers concentrate in Perumbavoor (Ernakulam), Paippad on the borders (Kottayam and Pathanamthitta), and Cheruvannur (Kozhikode). According to Nair (2015), migrant workers are being viewed as the *other* and seen (in suspicion) as carrier of diseases like HIV virus, Leishmaniasis and others. Leishmaniasis is a kind of fever and it has been widely reported in the Northeastern states (TNN, 2013). The reason for viewing migrant workers as 'the Other' can also be because of their unhygienic living standards and reports of their involvement in criminal cases, like the Jisha rape and murder case. This kind of experience of migrant workers is not exclusive in Kerala only, as Keralites in Gulf countries also get same type of treatment from their employers. Being treated in a dissimilar manner is, in fact, almost normal in human life; though as a human being, everyone expects to be treated equally.

Presently, Perumbavoor of Ernakulam district is highly dependent on migrant workers. Therefore, if the workers decide to go home together, the working places such as construction work, hotels, factories etc. are hampered (TNN, 2016a). There are around one lakh migrant workers in Perumbavoor who are mostly from Assam, Odisha, West Bengal and Bihar who work as gardeners, casual labourers, shop assistants, hotel waiters, construction workers, rubber tappers, coconut harvesters and kitchen hands. But, according to PK Krishnakumar, their living conditions are miserable (Krishnakumar, 2016). While higher wages and safety from violence does seem attractive, migrant workers in Kerala are not free from exploitation. Menon mentions

that Bengali migrant workers call Kerala their 'Dubai' (Menon, 2011). According to Surabhi K.S. and N. Ajith Kumar (2007), these migrant labourers often work for longer hours and are sometimes branded as unreliable and even criminal, by some local people, aided by the police. That some of them are involved in recent crimes in the state makes matters worse.

Ananda Padmanabhan J (2016) points out that in Kerala, while migrant workers are regarded as wealth creators in various sectors, the government does not pay much attention to it. They are often given names like *Babu* or *Bengali Bhai* by the locals, which make them feel uncomfortable (Nitha SV, 2015 December 18). Saikia (2014) mentions that migrant workers stay in construction sites, sharing crowded rooms without proper drinking water and sanitation. The report entitled *Domestic Migrant Labour in Kerala* provides the picture of migrant workers living in different places such as Perumbavoor (Ernakulam District), Chavadi Mukku and Thirumala (Thiruvananthapuram District) and Ramanthali (Kannur District) and states that the overall living conditions of the migrant workers is pathetic as they hardly have space to move in such crowded rooms (Narayana et al 2013). The reason for this could be the high living standards in the state as well as the intention of workers to send more money to their home as remittances. But, their unhygienic living conditions are leading them to suffer from diseases like cholera. Health check-ups and tests have also discovered diseases like malaria due to lack of hygiene and pre-cancerous conditions due to constant chewing of tobacco.

With the increase of migrants, Kerala has also witnessed the growth of crime rates (Radhakrishnan, 2012). For instance, two migrant workers were arrested in connection with the rape case of a Dalit law student in Perumbavoor (ANI, 2016). One of these two migrant workers is from Assam (ET Bureau & Agencies, 2016; TNN, 2016b). It has also been reported that the involvement of migrant workers in theft, burglary, drug peddling, drug abuse, kidnappings, fights and sexual crimes in the state of Kerala (KPM Basheer, 2015) collectively cause them to be branded as unreliable outsiders in the state. In the Ernakulam district of Kerala, official teams from excise and police departments carried out a search operation named *Operation Bhai* and seized banned tobacco products, sending 21 people to custody (Manorama Online 2015).

Besides these, there are also examples of violence against the migrant workers in the state. Unfortunately, according to the TNN report, though the exploitation of workers continues in the district of Ernakulam, the Labour Commissioner has only received complaints against not getting the promised wages and nothing regarding physical harassment. According to the TNN report, a migrant worker from Bengal was shot with an airgun by the employer and became hospitalised. The report further states:

"Keralites are very eager to raise voice for their rights. But when it comes to migrant labourers, they are not different from others. Labour department officials and the government should take stern action to nip the physical harassment incidents in bud itself as Kerala economy cannot survive without migrant workers" (TNN, 2016c).

In 2016, another migrant worker from Assam in Kerala was killed where he was tied up and left to die in the sun. Other workers tried to free him but failed. All this could have happened because he was mistaken for a thief, but it is definitely a sign of brutal activity (Kashyap, 2016, Philip, 2016). Killing cannot be a punishment for a thief. It is a threat to the right to life, which cannot be suspended even during emergency.

Despite all these difficulties, migrant workers are moving freely in Kerala and sending their incomes home. But, according to Maheshwari (2016), the wage that migrant workers are getting is lesser than the local worker for the same job. Every Sunday, migrant workers from North and Northeast India come to Perumbavoor to meet friends and send money to their homes. The market is popularly known as the Sunday Bengali Market (Mythri Prasad-Aleyamma, 2011). With an aim to initiate certain welfare schemes, as well as to keep a check on their (migrant workers') whereabouts, the Kerala state government has issued guidelines to register the migrant workers as mandatory. But, such a registration contradicts the freedom of movement of Indian citizens. As a result, while 63,200 labourers from other states are registered with the Kerala police (PTI, 2012), only around 53,000 persons are registered under the Kerala Migrant Workers Welfare Scheme, 2010 (PTI, 2016). Further, since Kerala does not have a proper record of migrant workers in the state, the government again wishes to introduce an insurance scheme for over 2.5 million migrant labourers (mostly from West Bengal, Bihar and the Northeast); thereby, hoping to get the data of the workers. Chief Minister Pinarayi Vijayan said once that the migrant labourers have now become an integral part of the Kerala society and the government has a duty towards them. Noticing the serious health issues of the workers, the government has assured to provide medical support and basic sanitation facilities (Manorama Online 2016 a).

Apart from that, the Urban Affairs Department, Kerala has begun the construction of night shelters for migrant workers as well as the natives at (Kochi), which is one of the largest hubs of migrant labour population. The workers can stay in these night shelters for around two three days paying a nominal rent as maintenance cost. The decision to set up night shelters was done by looking at the plight of the migrant workers (PTI, 2014). Further, in order to ensure the prevention of human rights violation of migrant workers, the Kerala High Court ordered the closure of an overcrowded lodge for migrant labourers at Ambalamugal (Kochi), as such a camp creates social issues and violates their rights (Manorama Online 2016).

Furthermore, in 2016, Kerala State Literacy Mission Authority (KSLMA) started a programme to enable illiterate migrant workers to read and write in Hindi and Malayalam and to make them aware about legal, health and environmental matters (The Hindu 2016). As a result of the good response of the pilot project done at Perumbavoor, it has been decided to extend the programme in the state for five hours a week. Most recently, the state government of Kerala has also started a creche facility for the children of working migrant workers. The facility will be availed by children who are between six months to three years of age and for that, a vehicle will be

arranged for picking up children from homes at around 7 o'clock in the morning and to drop them back by 6 o'clock of the evening.

5. CONCLUSION

The study clarifies that migration of people, including workers, is a natural phenomenon, which is unstoppable. It takes place due to a search for better opportunities as well as safety and security of people. In case of India, migration of workers to Kerala has been taking place due to various push factors such as weak financial condition and lower wages in the place of origin, reimbursement of debt, purchase of land, construction as well as reconstruction of houses; apart from pull factors like better pay, more working opportunities, shortage of workers in the destination state, better working situation and relatives and acquaintances working in the state. Further, the legality of the movement i.e. freedom of movement of the citizen of India within the country, has also contributed in the increase of migrant workers. All these factors contributed in the rise of population of migrant workers in the state of Kerala. But, study suggests that the living conditions of migrant workers is pathetic in the state; which is creating a surge of different diseases such as malaria, pre-cancerous conditions due to tobacco chewing, etc., including the most recent bout of cholera. Looking at the pathetic situation of the migrants, the Kerala state government has come up with programmes like medical check-up, through which various tests are being done.

The study further reveals that even though they are deemed with suspicion and treated as outsiders, the migrant workers have been helping the state of Kerala in filling up the gap of unskilled workers. It however goes without saying that the suspicion created towards them has been of their own doing, courtesy of their antisocial activities and their involvement in various crime records. They are also branded as disease carriers from their state of origin to the state of Kerala. Having said that, being treated as the 'other' and being called different names like *Babu*, *Bengali Bhai* etc., may cause an identity crisis in near future, although it seems harmless and usual right now. It cannot be denied, however, that the job opportunities in Kerala have helped them in saving up for the future and even building their dream homes. The successive state government is now coming up with various new initiatives, which would directly benefit both the migrant workers as well as the government in tracking the details of the migrant workers.

Negative government attitudes combined with ignorance created by inadequate data has led to the widespread neglect of migration as an important force in economic development. Not only that, several countries have actively discouraged migration through restrictions on population movement and employment. Consequently, migrants often have no access to civic amenities or government poverty reduction programmes en route or in their destinations, and they become vulnerable to harassment. A particularly vulnerable group of migrants – whose lives are more often than not, characterized by difficult and unsafe conditions – are *girls and women*, who are exposed to the danger of sexual harassment. While legislation does exist in some countries to protect migrant workers rights, it is routinely disregarded due to the lack of political interest. In

addition, the occupations pursued by migrant workers in the informal economy are declared illegal. This fuels rentseeking and corruption and also curtails economic activity.

The large influx of migrants from different parts of the country with different linguistic and cultural backgrounds does put pressure on governance as well as civic amenities. Besides, in the absence of reliable information on the quantum of in-migration of a floating nature, these migrants are unlikely to be taken into account while making population projections and consequently in planning. So, for integrating the issues of migration into local governance, alternative population projections (which include migrants of all types) have to be made. The volume and diversity of the migrant population has to be taken into account in urban planning and implementation of programmes and projects like the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) Programme and Kerala Sustainable Urban Development Project (KSUDP). Unless the numerous problems of the increasing number of migrant labour, including their integration in Kerala society, are not addressed in time, they can lead to violent social unrest like it did in countries like France in recent years.

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Original papers that fall within the scope of the Journal shall be submitted by e-mail. An Abstract of the article in about 150 words must accompany the papers. The length of research papers shall be between 5000 and 7000 words. However, short notes, perspectives and lengthy papers will be published if the contents could justify.

1. The paper may be composed in MS-Words format, Times New Roman font with heading in Font Size 14 and the remaining text in the font size 12 with 1.5 spacing.
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5. Use italics for title of the books, newspaper, journals and magazines in text, end notes and bibliography.
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 - 2) Bhalla and Hazell (2003): "Rural Employment and Poverty: Strategies to Eliminate Rural Poverty within a Generation", *Economic and Political Weekly*, Vol.33, No.33, August 16, pp.3473-84.

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