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CONTENTS

EDITORIAL

This volume presents multiple issues – India- Australia relations, environmental issue, Climate Change, Gandhi's contribution, and Biodiversity - each one necessitating deeper introspection.

In the first article on Indo-Australian ties, D.Gopal examines the possibility of forging strong relations between two great nations – India and Australia. Considering the values they share – democracy, free press, independent judicial system, secularism, multicultural polity, a common language, i.e., English that could serve as the lingua franca, and the geographical proximity allow both nations to emerge as extended neighbours. However, the hyphenated India-Australia relations are guided more by the interests of superpower America and the threat of rising China, but the prospects of weaving a cozy relationship appears roseate, argues the author.

One of the major bones of contention between the South and the North is related to environment bringing the debate on 'development' and the 'poverty eradication' on one side, and 'aggressive action for emission reduction' on the other side. The TWAIL (Third World Approach to International Law) scholars many a time rake the issue of 'fairness' in international environmental law as a major issue. In his article on India's environmental policy, especially climate change, Vishnu Konoorayar evaluates this issue from a fairness perspective. The author laments that the environmental laws and regulations that would help the climate change mitigation, largely remains as an ineffective tool to address the issues domestically.

Amidst the North South divide and the ideological differences among dominant theories in International Relations on different global issues, there exists a space, where all of them converge onconstructing Global Partnerships in Environment, argues Girish Kumar.The UN's Intergovernmental Panel on Climate Change (IPCC) set 2° Celsius (or 3.6° Fahrenheit) as the goal, which seems more or less accepted by all. One such positive step was the declaration of 2014 as the International Year of Small Island Developing States (SIDS) by UN to highlight the issues of Small Island developing states. The article by Kumar asserts on the necessity of building Global partnership on Climate Change.

Gandhian philosophy of peace and non-violence is not considered as a widely accepted and useful tool to analyse foreign relations, which is realist, aggressive and expansionist. But the recent emergence of International Relations (IR) as an independent academic discipline has also transformed the discipline of IR from studying the management of international borders to a

subject dedicated to studying global issues and its impact on the planet – postmodern trend that widened the scope of the discipline further. Roshan Varghese discusses this in his paper.

The indigenous people, whose regard their traditional knowledge as communitarian were always been skeptical about the institutionalization of IPR by the scientific community due to the thrust of latter on market and profit maximization. traditional knowledge is created and shared by the members of local communities. It is the fruit of an intergenerational process, whereby generations pass on their cultural heritage, which continuously grows. There is no need to commercially trade traditional knowledge within the indigenous communities, there is no fear of such knowledge being stolen, and thus local people have not been compelled to codify it in a written form Given this perceived incompatibility between IPR and traditional knowledge, there is a case for the development of a sui generis regime specifically adapted to the nature and characteristics of indigenous knowledge. Salvin Paul examines this issue from an Indian perspective.

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Editor

India – Australia Relations: Retrospect and Prospect

Darvesh Gopal *

Abstract

India and Australia are strong, vibrant, secular and multicultural democracies. They both have a free press, independent judicial system, democracy and a multicultural polity. Both have several commonalities, which serve as foundation for closer cooperation and multi-faceted interaction on lines similar to what India has developed with other western countries. The Indo-Australian relationship has grown in strength and importance since India's economic reforms in the nineties and has made rapid strides in all areas-trade, energy and mining science and technology, information technology, education and defence. The hibernated India-Australia relations are guided more by the interests of superpower America and the threat of rising China. Concomitant to this, there are many significant irritants which have marred the blossoming of relations. This article analyses possibility of powerful relation between two countries-India and Australia.

Keyword: India, Australia, Indo-Australian ties

1. INTRODUCTION

"It is under-appreciated that Perth and Chennai are closer to each other than Sydney is to Seoul, to Shanghai, or to Tokyo. As the world sees the potential of an Asia-Pacific Century unfold, Australia sees India at the heart of this historic shift."[1] In September 2008, in a key note address in University of Western Australia, the Foreign Minister of Australia Mr. Stephen Smith acknowledged Australia as India's extended neighbour. In 2012, Prime Minister Julia Gillard in *Asian Century White Paper* prioritised India along with five other countries for building comprehensive and stronger relationships.[2] In 2013, Mr. Smith, as Defence Minister, complemented Gillard by reiterating emphasis on India in the Defence White Paper and uses the term "Indo-Pacific" to state the "ongoing economic, strategic and military shift" rather than using the

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conventional terminology of Asian-Pacific.

India and Australia, popularly connected by 3C's i.e. Curry, Commonwealth and Cricket, have many things in common. Both being erstwhile colonial countries under British imperial power, have inherited parliamentary system of governance. They boast of free press and independent judicial system. Both share a strong, vibrant, secular and multicultural democratic set up. The geographical proximity allows the countries to become extended neighbours. A common English language serves as a significant link. And of course, cricket binds the two countries well together. Commenting on the remarkable similarities between the two countries, Punendra Jain and Peter Mayer aptly writes "if Australia and India were approaching a proposal for an arranged marriage, astrologers would conclude that 'the horoscopes are in agreement."

But, despite sharing many commonalities, Indo-Australian relations appear to be cold and neglected. "Australia has mostly been the suitor and India the reluctant bride", wrote Sandy Gordon. "An encounter between impatient Australia and non-committal India", said Michael Wesley. Academicians have repeatedly pointed the much evident void in many works, including, 'A Tale of Missed Opportunities' (Gurry 1993b), 'No Will or Way?' (Gurry 1993a), 'Australia's Neglected Neighbor' (Gurry 1996), 'Peaks and Troughs' (Kuruppu 2000), 'The Diplomatic Vacuum' (Vicziany 1994).

The hyphenated India-Australia relations are guided more by the interests of superpower America and the threat of rising China. Concomitant to this, there are many significant irritants which have marred the blossoming of relations. Globalisation process, today, is calling the shots in the international system. And global power dynamics is also undergoing a remarkable change. No country can afford to remain isolated or distanced for long. Interdependency is imperative for securing development, security, peace and prosperity in the region.

Therefore, there is a need to relook and resurrect the lost thread in India-Australia relations. The paper intends to retrospect the relations. It will also deal with the underlying convergent and divergent perceptions and will, conclude with the policy measures to weed out the non-harmonious aspects plaguing the relations.

2. RELATIONS SINCE 1950s: PEAKS AND TROUGHS

The Clash of Titans

At the onset of independence in India in 1947, Australia's labour government that held power till 1949 had 'close and sympathetic' relations. Australia reciprocated India's invitation for

participation in Asian Relations Conference held in 1947 in New Delhi by sending its two representatives. Although differences arose over two critical issues- one, that of United Nations Security Council veto rights and treatment to be meted out to newly defeated Japan and the second, of biased 'white only' immigration policy which prevented Asians from entering Australia, the relation was, by and large, positive and forward looking.

In 1950, things took a conflictual turn with the arrival of two robust personalities – Jawaharlal Nehru, India's first Prime Minister and, Robert Menzies, the longest serving Prime Minister of Australia. The two differed in their ideologies- Nehru was a leader of third world struggles whereas Menzies was an Anglophile Empire loyalist.

Menzies was of the view that India, fresh from the freedom struggle, was not fit for self rule and the latter should have, therefore, offered loyalty to the British Crown as Australia did. The two also clashed over the White Australia Policy, the Suez Crisis in 1956, apartheid in South Africa, UN involvement in the Korean War and the Southeast Asia Treaty Organization (SEATO) Pact.

Differences in foreign policy were also a cause of tension in the relations. During cold war, India adopted more of an idealist posture and pursued non alignment policy. Australia, guided by its geo strategic positioning, always felt a threat to its security and wanted to defend itself from resurgent Japan; therefore, got allied with western powers and signed the ANZUS Treaty of 1951. The close alliance with USA allowed for nuclear ships to be stationed in Australian ports, while joint Australian and U.S. defence facilities in North West Cape, Pine Gap and Nurrungar connected Australia to the US nuclear infrastructure through the presence of US CI facilities.

Other factors which strained the relations were Australia's trusteeship over Papua New Guinea and the clash between India and Pakistan over Kashmir's accession. A confidential foreign document says, "In determining the line to follow [on Kashmir] the fundamental principle should be to cultivate Pakistan rather than India if we must make a choice".

1971-1998: The Undulating Period

This period was marked with fluctuations, with India-Australia relations witnessing happy and not so happy moments. The change of government in Australia brought many discernible changes in its foreign policy. Labour party under the Prime Ministership of Gough Whitlam (1972-1975) put a stop to Australia's involvement in the Vietnam war; secondly, France was taken to International Court of Justice for carrying out atmospheric nuclear tests in the South Pacific; third, recognition was given to China, North Vietnam, East Germany and North Korea; fourth,

cultural accord was signed with many of the Asian states including India in 1971 and development assistance to third world countries was greater than before, and fifth, 'white only' biased immigration measures were scrapped. Whitlam extended hand of friendship by visiting India where no Australian PM had done since 1959. Because of India's cold attitude, the relations did not make much head way.

The relations dropped to low again in 1975 when liberal party under the leadership of Malcolm Fraser criticised India's closeness to Soviet Union.[3] He stated "the policies of India to us seem to some extent unreal. They condemn the United States in their effort to build a support base at Diego Garcia in the Indian Ocean which is necessary to preserve balance but they don't condemn the build up of the Soviet Union in the Indian Ocean". The 1971 Indo Soviet Treaty of Peace, Friendship and Cooperation further affirmed Fraser's allegations.

Australia's apprehensions of the regional instability were placated when the international environment underwent significant changes. Demise of cold war, collapse of the socialist bloc - Soviet Union, and the advent of globalisation which focussed on economic growth and prosperity, allowed it to re-look and re-question its security perceptions. Australia reshaped its foreign policy and based it on multiculturalism. To enhance engagement with the Asian countries, they adopted the 'Look West' policy. The 1994 Defence White Paper stated "a new strategic architecture will evolve as the structures of recent decades fade. Much will depend on the policies of major Asian powers- Japan, China, and India- and on their relationships with one another and with the other countries in the region".

Australia also advanced its trade, culture, tourism, education, sports and entertainment links with Asian powers including India. But the smooth running with India was again marred when Australia sold 50 Australian 'Mirage' aircrafts to Pakistan in 1990 during the time of heightened tensions in Kashmir. Secondly, the cautionary attitude of Australia rather than that of a strong action to the racially biased constitution of Fiji led to distrust in the Indian political circles. Thirdly, Australia's vociferous concerns regarding India's naval build up was considered unnecessary by the latter.

The flips flops in the relations continued. In some situations where Australia was a suitor, India acted as a reluctant bride. On the other, India was also well aware of Australia's policy of taking one step forward and two steps backward.

In 1996, under the conservative government of John Howard, emphasis was again laid on India. White Paper of 1997 stated "with economic growth and closer links with the Asia Pacific, India will become a more significant influence in regional and global affairs, and a more important trading and investment partner for Australia." But. when it came to supporting membership of

India in APEC and UN Security Council, Australia turned its back.

In 1998, India's nuclear tests became a major thaw in the relations. Australia's harsh reaction did not go down well amongst the Indian authorities. Prime Minister John Howard criticised it as an 'ill-judged step' that would have 'damaging consequences for security in South Asia and globally'. His Foreign Minister Alexander Downer called the tests 'outrageous acts perpetrated by India'. Canberra withdrew its High Commissioner from New Delhi, suspended ministerial and official level visits and defence relations, and cancelled naval ship and aircraft visits, officer exchanges and other defence-related visits. India too responded by severing all military ties with them.

The 9/11: Security Concern

The repercussions were felt in the Asian region with September 11, 2001, attacks on World Trade Centre. Regional security and stability was threatened. China was also emerging as a major power, challenging the dominance of US. America, to hedge the power of rising China, cozied up with India and acknowledged it as a responsible nuclear state. Australia, being a US client state, too, toed the same line and started warming up the relations with India. Foreign Minister Alexander Downer visited New Delhi in March 2000 and announced resumption of military ties. The 2000 Defence White Paper resuscitated India's importance by stating that 'it is India's growing role in the wider Asia Pacific strategic system that will have more influence on Australia's security.' In the post 9/11 environment, a Memorandum of Understanding on Co-operation in Combating International Terrorism was signed in August 2003 followed by a Memorandum of Understanding on Defence Cooperation in 2006. Second track security dialogue between the two countries also took momentum. Joint naval exercises were also held between the two countries along with US, Japan and Singapore coded as "Malabar Exercise". Navy-to-navy talks began in January 2007 and proposals were made to joint talks between the Indian and Australian air forces.

3. CONVERGENCE IN INDIA- AUSTRALIA RELATIONS

India and Australia share, most importantly, democratic norms and are a voice for building stronger institutionalised governance in the region. But, unfortunately, relations between the two countries have been guided more by security perspective. The two have engaged and cooperated in many other areas which have been ignored at our own peril. Focus on the multiple converging areas will aid in strengthening of relations, so much so that despite being distances far, the two can become trusted allies and leaders in securing regional peace and security. This part will deal with the convergences between India and Australia.

Trade

Australia is India's eighth largest trading partner and India is Australia's fifth largest trading partner. India's ranking among Australia's export destinations has risen from twelfth to fourth in the period 2003-04 to 2009-10. Trade has been growing exponentially. From A$ 6.54 billion in 2003-04, trade in goods and services between India and Australia reached A$ 18.35 billion (US$ 19.16 billion) in 2011-12. India's exports to Australia were A$ 3.30 billion (US$ 3.45 billion), while India's imports from Australia were A$ 15.04 billion (US$ 15.73 billion).India's export of goods to Australia in 2011-12 was A$ 2.49 bn (US$ 2.60 bn) and India's import of goods was A$ 13.11 bn (US$ 13.71 bn). India's export of services was A$ 0.80 bn (US$ 0.84bn) and import of services was A$ 1.9 bn. (A$ 2.0 bn). India's main service exports to Australia are computer and information services and tourism. Main Australian service exports to India are education, education-related travel and tourism. India is Australia's largest export market for gold and chickpeas, second largest market for coal and copper ores, and third largest market for lead and wool. Four products – coal, non-monetary gold, copper ores and concentrates, and petroleum –accounted for over 80 percent of India's imports from Australia, with coal and gold being the dominant imports in 2011-12. India's major exports to Australia in 2011-12 were pearls and gems, jewellery, medicaments and passenger motor vehicles.

The India-Australia Joint Ministerial Commission was also established in 1989 and has held fourteen meetings to date; the last one was in New Delhi on 30 January 2013 which was co-chaired by Australian Trade Minister Dr Craig Emerson and Shri Anand Sharma, Minister for Commerce & Industry. Negotiations for a Comprehensive Economic Cooperation Agreement (CECA) have already begun. The Gillard Government also launched an Asian Century White Paper stating that Australian Government wanted to increase overall relations with India in every sphere. Both the countries have set a goal of A$ 40 billion bilateral trade by 2015 (from the current level of A$ 18.35 billion).

Foreign Direct Investment

In terms of investment, the Australian direct investment in India was $205.1 million in 2001 which rose to $755 million in 2010. Indian investment in Australia was negligible in the early years and Indian investors appeared on Australian Foreign Investment Review Board's list for the first time in 2007-2008, ranking in 20th place with $793 million of investment approved. In 2009-2010, India's ranking rose to 13th place with $1.6 billion of investment approved. Major Indian investments in Australia include Sterlite Industries (copper mines, Aditya Birla Group (copper mines), Gujarat

NRE Co. (coal mines), Asian Paints, Reliance has entered into a partnership agreement with Uranium Exploration, IFFCO and Legend Holdings of Australia have entered into an agreement involving investment of over A$ 100 mn by IFFCO in Legend's phosphate projects with buyback arrangements; NMDC and Rio Tinto have entered into an agreement for joint exploration in India, Australia and other countries.

Tata has enhanced their investment in a mining joint venture (led by Vale of Brazil) in Queensland. Tata Power and Australian company Geodynamics have entered into an agreement involving Tata Power taking an 11.4 per cent stake in Geodynamics for A$ 44.1 million. Petronet LNG, New Delhi has signed an agreement with Exxon Mobile in August 2009 to source 1.5 mmt pa of LNG from the Gorgon Project, for 20 years starting from 2014. The Adani Group of India, owners of the country's largest private port, have acquired a coal mining prospect from Linc Resources in the Galilee Basin in Queensland. The deal is valued at $1 billion. $500 million in cash paid to Linc Resources and a royalty of $2 per tonne over 20 years. Adani has also acquired rights to manage the Abbot Point Coal loading terminal for a period of 99 years at a cost of A$ 1.83 billion. Lanco Infratech made an investment in Australia, spending almost A$ 850 million to buy Griffin coal assets. GVK Power and Infrastructure has finalised purchase of two thermal coal mines from Australia's Hancock Prospecting for about US$ 2.4 billion and is also investing in development of rail network from the mine to the nearest port, which entails a total investment of U$10 bn. NMDC concluded the purchase of half stake in Perth based Legacy Iron Ore in September 2012 and is conducting due diligence for the purchase of the Ridley magnetite project of Atlas Iron Ore. Infosys has acquired Portland Group, a sourcing and category management services firm in Australia for A$ 37 million. ICICI Bank has obtained necessary RBI approval to open its branch office in Australia. All the major Indian IT companies have a presence in Australia and are rapidly growing. These include Infosys, Satyam Mahindra, TCS, HCL, Polaris Software Lab Ltd, Birlasoft, NIIT, ICICI Infotech, Wipro, Mahindra-British Telecom Ltd, i-Flex, igate, among others. Satyam Mahindra has the largest product development centre outside India in Melbourne.

Australian presence is evident in India, too. Cochlear (Hearing implant system), FAT Systems Pty Ltd (Biofuels projects), GHD (Global engineering services company), Leighton Contractors Pty Ltd, Macquarie Group (M&A advice, principle investing), ResMed (manufacturer of sleep apnoea equipment), Woolworths (JV with Tata Group for electronic store Croma) have set up their businesses.

Rise of China

'Blue Book' of China has for the first time spelled out its policy to secure its interests in the Indian Ocean region. The region holds strategic importance for preserving sea lines of

communication in China. The Red Dragon has pursued the policy of 'String of Pearls' to preserve its sea lines of communication in the Indian Ocean Region. It has increased the presence of submarines to over 45 in comparison to India, which is 14. The Blue Book says that it wants to deepen economic engagement and not to show off its military strength. But, this is contrary to the aggressive and imperialistic attitude exhibited by extending its influence over the resources in South China Sea. With China, being an authoritarian and closed country, it is difficult for the Asian region to engage with it. Also, China has never taken up the mantle of being a harbinger of peace and security in the region. It has been a free user of public goods till now, provided by United States for close to two decades. China's attitude smirks more of asserting its hegemony and taking control of region, which makes Asian countries sceptical of its real design. And the scepticism is affirmed by an explicit warning in Blue Book that Indian Ocean could end up as an "Ocean of conflict and trouble", if countries like India, the U.S. and China failed to engage with each other more constructively as their interests begin to overlap.

Australia and India, to secure their interests in the Pacific and Indian Ocean, can cooperate and engage constructively and critically with China to build a stable and peaceful Asian order.

Multilateral Fora Membership

The two secular and democratic countries have extended their coordination and cooperation at important multilateral fora, including the ASEAN Regional Forum, East Asia Summit, the Group of Twenty, and the Indian Ocean Rim Association for Regional Cooperation. Australia has also lend its support to India's campaign for permanent membership at the UN Security Council and its membership at APEC while India wants Australia to be included as an observer nation at South Asian Association for Regional Cooperation (SAARC).

Common Concerns

21st century has given rise to new security threats. Australia and India need to enhance their engagement in the areas of counter-terrorism, non-proliferation, disaster management, and combating illegal migration. Another area which requires immediate focus is Afghanistan. Drawdown of U.S. forces has made the country fertile for the comeback of Taliban. The consequences of this security void can spill over and ominously impact the regional stability and peace. The two common wealth countries along with US, Singapore and Japan conducted multilateral naval exercise in 2012, christened as Malabar exercise.

Cultural Exchanges

Many Indian Associations in Australia play an important role in promoting Indian culture by

organising cultural functions occasionally. High Commission of India & ICCR sponsor the dance troupes from India to Australia to perform Traditional Indian cultural Programmes during Diwali celebrations with the help of Indian Associations in various cities in Australia. Know India programme is also a great learning experience for Diaspora children about the rich heritage and cultural of India, the economic progress and social development taking place in India. Australia-India Youth Dialogue is also held for furthering collaboration, sharing ideas and innovations to build sustainable long term relationships with each other.

Indian Community

In 2012, India became the largest source of migrants to Australia**.** They are contributing significantly to the Australian economy as teachers, doctors, accountants, engineers and IT professionals. A Regional 'Pravasi Bhartiya Diwas', an event to mark the contribution of the overseas Indian community to the development of India, is scheduled to be held in Sydney for three days from November 10-12, 2013.

Tourism

Tourism between the countries is growing rapidly: 1,65,500 Australian tourists visited India in 2010 and 1,38,700 Indian tourists visited Australia in 2010.

4. DIVERGENCE IN INDIA-AUSTRALIA RELATIONS

Nuclear Non Proliferation

Australia projected a hypocritical stand in May 1998 when India exploded series of nuclear weapons in Pokhran, Rajasthan. The former was of the view that nuclear proliferation in the region will propel an arms race thus disrupting the peace and stability. Although both the countries profess and stand stoutly for non proliferation, but the confused reaction of Australia did not go down well with the Indian political authorities. Firstly, Australia failed to respect India's view on a discriminatory CTBT regime, which allows nuclear states to enhance their nuclear capabilities or, to be precise, permits vertical proliferation but debars non nuclear states to develop theirs. Secondly, it did not take into account the turbulent yet dangerous nuclear neighbours- Pakistan and China and the imperative of India to go nuclear. Thirdly and most importantly, Australia does not provide explanation of its sale of uranium to Communist China who reportedly passed it on to nuclear irresponsible states -Pakistan and Iran. And India, on the other hand, uses it for its energy use.

The nuclear non proliferation once again became a political issue when India signed a civilian nuclear deal with USA in 2006. Australia, third largest producer of Uranium[27], was pressurised, most notably by India, to sell its Uranium. Howard government initially resisted as

India has not signed nuclear Non Proliferation Treaty, but, later agreed. In August 2007, Howard announced Australia would sell Uranium to India under strict conditions through an agreement allowing Australian nuclear inspectors to ensure the Uranium was used only for power generation. But the Leader of the Opposition, Kevin Rudd vowed to 'tear up' any nuclear deal with India if Labor Party won the next election. And weeks after the announcement, Rudd's government came to power, he honoured its election promise scrapping the nuclear deal and thus delivering a significant blow to India's energy needs. Supply of Uranium has been a major strain in the Australia India bilateral relations and more so of the fact that the former has not been able to justify its sale to Communist China, who although being a member of nuclear Non Proliferation Treaty, holds a notorious record of supplying nuclear technology and materials to North Korea and Pakistan, and has nuclear ties with Iran. And India, despite not being a signatory of NPT, has an impeccable record of using Uranium for its own security and energy needs.

To straighten out the Uranium entanglements between India and Australia, the Gillard government "is considering how it might put in place arrangements that would enable exports of Australian Uranium to India".

Indian student attacks

Attacks on Indian students in Australia bruised the relations and generated widespread protests. In 2007, more than 65,000 Indian students were enrolled in various educational institutions throughout Australia. By 2008 it was estimated that 35,000 new Indian students were arriving each year, bringing the total to around 95,000 – about the same number as Indians studying in the USA.

To manage the crisis, the government arranged a hasty trip to India by a high-powered delegation composed of members from Federal and State governments, the police and education in early July 2009. In their meetings with oûcials, the media and parents, they stressed that Australia would never tolerate racism and would devote more resources to ensuring the safety of Indian students.

This controversy seems to be ebbing with the recent poll survey conducted by the Lowy Institute and Australia India Institute, ranking Australia as the second most preferred country to study abroad next to US, by Indians. 75 per cent respondents who participated believed Australia was a good place to be educated.

5. CONCLUSION

The starking similarities which India and Australia share, beyond the Cricket, Curry and

Commonwealth, make them natural allies. In this globalised and interdependent milieu, engagement is the buzzword. And more so, when there are manifold threats staring the Asian region. Effective diplomacy needs to be enhanced. Trade between the countries is still low. India ranks 24th in terms of trade with Australia and 11th in foreign investment. No Indian Prime Minister has visited Australia for 26 years since the visit of Rajiv Gandhi in 1986, whereas, Australian Prime Ministers have paid three visits to India since 2000. India holds an important place in Australia's 'Look West' policy but Australia has been sidelined in India's 'Look East' policy. Gordon once famously remarked that 'Australia has mostly been the suitor and India the reluctant bride'. The nuclear issue has upset the higher political authorities but there are many convergent areas where Australia and India can involve bilaterally and multilaterally.

India and Australia stoutly uphold the democratic beliefs. With their greater cooperation, stronger and comprehensive relations, the two can set the norms of regional governance based on justice, freedom and sovereignty. This will also aid in preserving the most cherished virtues of peace, security and stability in the New Asian Order.

End notes

1 Key note address by Stephen Smith at the University of Western Australia, on September 2008.

2 We will work with the Australian community to develop comprehensive country strategies, with China, India, Indonesia, Japan and South Korea as our initial priorities, to bring a stronger national purpose and cohesion to these relationships.

3 In August 1971, India and Soviet Union signed a Friendship Treaty.

4 Australia reemerges as preferred country for Indian students

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Gauging India's Environmental and Climate Change Policy from a Fairness Perspective: We Need to Change!

Vishnu Konoorayar*

Abstract

The debate on multilateral action on climate change has been a polarized one since the beginning. It consistently brought the development and the poverty eradication argument on one side of the debate and aggressive action for emission reduction on the other side. Naturally, India along with other developing countries was on the former side of the debate and developed countries on the other side. This article examines India's current domestic policy in comparison with the actual practices of environmental protection and emission reduction.

Keywords: Climate change, Fairness, Environmental Protection, Pollution

1. INTRODUCTION

The debate on multilateral action on climate change has been a polarised one since the beginning. It consistently brought the 'development' and the 'poverty eradication' argument on one side of the debate and 'aggressive action for emission reduction' on the other side. Naturally, India along with other developing countries was on the former side of the debate and developed countries on the latter side. The developed countries argued that the energy consumption in 'key developing countries'[1] in recent times would lead to such massive quantities of GHG emissions, that no matter how stringent the emission curbs in the developed countries, the planet's climate would be at severe risk. They also criticised the present method of calculating emissions on *per capita* basis and instead argued for measuring it on absolute terms. Responding to these, the developing countries pointed out that that they are still very poor[2] and though some of them experienced impressive GDP growth rates in the recent past, their *per capita* GHG emission is just a fraction of those of the developed countries.[3] Thus, they argue "in terms of the accumulations of GHGs in the atmosphere, which is what actually leads to climate change, their responsibility is

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miniscule or negative." With this background, this paper analyses India's current domestic policy in comparison with the actual practices of environmental protection and emission reduction.

India's contemporary domestic and foreign policy on climate change could be understood from the statement made by the Minister for Environment and Forests in the *Lok Sabha* during the Pre-Copenhagen Debates in 2009. He said:

> "When I took over as Minister of Environment and Forests…the Prime Minister's instructions to me were, 'India has not caused the problem of global warming. But try and make sure that India is part of the solution. Be Constructive; be Pro-active'. Then I asked myself, what is India's position when it comes to international negotiations? The only position India had: 'Our *per capita* is very low; your *per capita* is very high; therefore we would not do anything.' Sir, *per capita* is an accident of history. It so happened that we could not control our population. That is why, we get the benefit of *per capita*…It is an important point because *per capita* is the only instrument of ensuring equitable distribution. But it cannot be the only point. …So, when I first started looking at the international canvas, I was struck by the fact that India's position was: Our *per capita* is low and, therefore, we are entitled to pollute more till we reach your *per capita* levels. Since you have caused the problem, you must fix the problem".

Continuing further he said:

> "So, I ask myself this question: can we go beyond the *per capita*? *Per capita* is the basic position. Our *per capita* is low. Our Prime Minister has said that our *per capita* emissions will never exceed the *per capita* emissions of the developed world. My friends from the Left Parties accused me of compromising the Prime Minister's statement. Sir, this is English language. This is semantics…To my simple mind, I do not see any difference between 'will not exceed' and 'will remain below'. It is the same thing. Sir, there are some non-negotiables for us at Copenhagen. Let me categorically state what these non-negotiables are…The first non-negotiable is that India will not accept a legally binding emission reduction cut…I want to say this absolutely, clearly and categorically. There is no question of India accepting a legally binding emission reduction target… Second, there are some attempts by some countries to say that developing countries should announce when their emissions will peak. Let me say that this is the second non-negotiable for us. We will not accept under any circumstances an agreement, which stipulates a peaking year for

> India… There is a third non-negotiable. Today, it is non-negotiable, but depends on the concessions that we can get from the western countries. Perhaps, we could modulate our position in consultation with China, Brazil and South Africa.[4] We are prepared to subject all our mitigation actions, whatever we do, which is supported by international finance and technology to international review. There is nothing wrong with it, as we are getting money from outside and we are getting technology from outside…The problem arises on the mitigation actions, which are unsupported, that is, that which we are doing on our own. We certainly would not like the unsupported actions to be subject to the same type of scrutiny that the supported actions are subject to…"

And therefore:

> "I separate the domestic responsibility from international obligations. I want to be aggressive on domestic obligation and I want to be pro-active on international obligation because in International obligation there is only one thing that counts. Ultimately, when I go to Copenhagen, it is not G-77 or China or America or Brazil or South Africa; it is India's interest that counts".

In continuation with these statements, India at the 2009 Copenhagen Summit, announced that it would voluntarily reduce its emissions intensity between 20 and 25% below the 2005 levels by the year 2020. The statement made by the Minister in the Parliament and the subsequent change in the policy indicates a shift in India's foreign policy in relation to the climate change. Earlier, the consensus amongst the Indian policy makers was that 'India does not have the responsibility because we did not pollute in the past'. Traditionally, such a stand was considered to be in tune with India's national interest. After more than two decades of economic liberalisation, the same policy makers have started thinking that India's national interest demands more commitment. A commitment that is more constructive and proactive. A commitment that is *per capita plus*. In this context, the important question is as to what extend the commitment has to be 'aggressive' on domestic obligation made to the lower house of the Parliament is reflected in India's various policies regarding the protection of the environment.

During the past two decades and more India has made impressive drive towards constructing and adopting various Policy Statements, foreign and domestic, pertaining to the various aspects of environmental protection, including climate change. Efforts were also made for changing and modifying these policies according to the circumstances. Attempts were also made to carry forward these policies, externally in its relations with other States through various diplomatic efforts and internally through the enactment of various statutes,[5] framing various rules and

regulations and also through judicial decisions. In this context, there are a few questions that are required to be answered. They include the following:

(a) Are these policies and the outcome of the efforts of their implementation fair? How do they attempt to *social engineer* the conflicting interests of various sub-national groups and take the *social minimum* to the needy?

(b) Have these policies and the implementation schemes achieved its desired objectives? If not, what were the reasons for such a failure?

This paper is an effort to answer these questions. While doing the analysis, the emphasis will be on the Indian forest laws and pollution laws.

2. WHY ENVIRONMENTAL PROTECTION AND CLIMATE CHANGE MITIGATION IS IMPORTANT FOR INDIA?

The term climate change refers to the long-term changes in the temperature, humidity, clouds and rainfall and not the day-to-day variations. Regional climate change is caused by both local and global factors. Such a difference is extremely important because if a regional climate change occurs on account of local factors, then these changes can be mitigated by the local action. For example, if Kerala is getting warmer because of the failure of the proper implementation of the local emission laws, then mitigation efforts cannot do without successfully implementing the laws with or without changes. At the same time, if the entire country is getting warmer because of the increased pollution in India, then the corresponding changes have to be made in the environmental laws of the entire country. At the same time, if the reasons for climate change were global *i.e*. the aggregate emission from the other countries (known as *ecological shadow*[6]), then the idea of bringing emission reduction through a global consensus would gain importance. It has already been stated that India is the leader and voice of developing countries, when it comes multilateral action in climate change. The Country has been successful, through such proactive steps in preventing the extremely unfair standards from finding a place in the rulebooks. However, India has not shown the same level of caution in laying down the rules internally and implementing them effectively.

The important question is as to why India should be more concerned about the issue of climate change in comparison to other countries? The answer lies in the fact that India is the second most populous country in the world and majority of its population lives far below or somewhere near the poverty line. This population is also unique in the world due to its extreme variations in accessibility to the resources. As has already been stated, regional climate is influenced not only by the global increase in emission, but also by the regional change in the use of land and

other natural resources. Such changes increase the *all India mean surface temperature* which was the highest in 2010 and it has increased by 0.51°C in the past 106 years. It is also projected that the maximum temperature might increase by 2 - 4°C by 2050s. This is of particular importance considering the fact that, even relatively small climatic changes can have a huge impact on the water resources, particularly in arid and semi-arid regions such as the northwest India. There were also fluctuations in the increase in the annual mean temperature in various states and regions.

The increase in emissions has reflected in the fluctuation of rainfall also. An increase in the rainfall has been observed along the west coast, northern Andhra Pradesh and northwest India at 10 to 12 percent over the last 100 years. At the same time a decrease has been observed over the east Madhya Pradesh, northeast India and some parts of Gujarat and Kerala at 6 to 8 percent. Such fluctuations in the temperature or rainfall will seriously affect in a harmful manner certain classes of people like the Indian farmers who are highly dependent on agriculture and Indian women, particularly rural women, who are living below or near the poverty line.

There is a lot of concern about the impact of global warming on glaciers. In most parts of the world, glaciers are retreating. During the past 50 years, many glaciers have retreated at an average of 10 metres per year due to the anthropogenic reasons. This is much faster than the gradual retreat of glaciers due to natural causes. This also will have an impact on the availability of fresh water since glaciers form the main source of water for the key perennial rivers such as the *Indus*, *Ganga* and *Brahmaputra*. Almost 67 percent of the glaciers in the Himalayan mountain ranges have retreated in the past decade and will continue to retreat, diminishing the flow of the aforementioned rivers and leading to severe water shortage as well as potential food insecurity and diminished energy security including the hydropower generation.

Similarly, the rise in the sea level is another serious concern pertaining to the global warming. An increase in sea surface temperature will lead to an expansion of seawater and hence an increase in the sea level. In addition, ice melting from glaciers also has led to further increase in the sea level. During the past 100 years, the global sea level has increased by around 170 millimetres. Such an increase in the sea level is a major concern because a large fraction of India's population resides within 50 kilometres of the seacoast. It is also predicted that an increase in the global mean temperature by 1 degree celsius will raise the sea level by 25 metres. In India, West Bengal and Gujarat are the most vulnerable states to sea level rise. An increase of one metre sea level will submerge, almost 6000 square kilometres of land in India. The observed rate of sea level rise along the Indian coast has been estimated between 1.06 and 1.75 millimetres per year. The highest recorded rise has been along the coast of West Bengal. A sea level rise of 0.4 to 2.0 millimetres has been recorded along the Gulf of Kutch. Along the Karnataka coast there has been a relative

decrease in sea level. Rising sea levels will lead to salt intrusion into the coastal fresh water sources and thus, threaten water availability.

These facts and figures have created lots of fear in the minds of people in India. An examination of these concerns are important in the light of the research and study revealing that more than 80 percent of Indians regard climate change as posing a serious threat to themselves and their families and that more than 40 percent, in fact wish to see their government consider climate change at an even higher priority than it does. However, when one speaks about the background of climate change policy and strategies of India, it is imperative to know as to what is the *per capita* GHG emission of India in comparison with the other major countries. The following table compares India's *per capita* GHG Emissions with a few major industrialized countries.

Table 1: India's per capita GHG emissions in comparison with other countries based on 2008 statistics

Country	Per-capita GHG emission (In Metric Tonnes)
USA	20.01
EU	9.40
Japan	9.87
China	3.60
Russia	11.71
India	1.02
World Average	**4.25**

The above table reveals that despite the fact that India is a fast growing economy in the world, it is still causing less than a fourth of the world average of GHG emission. When quantified on *per capita* basis, which is much below the *per capita* level of emission in the developed nations.[7] Despite these figures, 'there is no country more vulnerable to climate change than India, on so many fonts'. There are mainly four points of vulnerability that are particularly worth mentioning here. They are the following.

(a) The first major point of vulnerability arises from India's heavy dependence on the monsoons. India's economic and agricultural systems are closely tied to it. Two out of three people in India are either directly or indirectly depend on agriculture for employment. An indifferent monsoon brings down India's economic performance, but more importantly affects the

low-income groups the most. An analysis of data over the last 50 years shows that nearly half of our fluctuations in GDP are related to the variations in the monsoon. It may be said that, what happens to the monsoon is the single largest determinant of prosperity in India.

(b) The second point of vulnerability is India's coastline. It is one of the longest in the world and more than 250 million people live there. A large proportion of them are dependent on climate sensitive livelihoods such as agriculture or fishing. Hence a sea level rise of even one meter would have serious implications on people living in the cost.

(c) The third vulnerability comes from the threat of Himalayan Glaciers. While glacial movement is a highly complex phenomenon, it is unequivocal that in general, the health of our glacier is threatened. Melting glaciers will have a direct impact on water availability to hundreds of millions people across the *gangetic* belt, disrupting crop production and affecting rainfall patterns.

(d) The fourth major point of India's vulnerability is India's dependence on extraction of the natural resources. Most of India's core mining areas are in the heart of densest forests. This simply means that the more mining, the more forests are destroyed and more additions are made to GHG emissions.

As noted above, the majority of the Indian population lives below the poverty line and they are the most vulnerable to issues of climate change. They will be severely affected by the adverse impacts of climate change such as droughts, floods, and risks to human health, food security, lives or livelihood in the economy. Another sub-national group that will suffer due to the climate change is the farming community. It is predicted that, the climate change can cause a loss of 10% to 40% crop production by 2100 and reduce farm income between 4% and 26% in India with a decline in forest productivity. It also will have serious impact on the cost of energy, which will in turn affect the agriculture and industrial sector. It may also be noted that in recent years, India's primary energy consumption has been increasing due to population growth.[8] Extreme weather events would also create health problems. Serious contamination of freshwater supplies with human waste and bacteria would be one of such reasons. Glacial retreat, decreased rainfall and increased flooding in certain areas will threaten the water availability, access and quality. The per capita availability of freshwater in India is expected to drop from around 1,820 cubic metres currently to below 1,000 cubic metres by 2025 as a result of the combined effects of population growth and climate change.

3. ENVIRONMENTAL PROTECTION AND GHG EMISION REDUCTION: EFFECTIVENESS OF THE LEGAL MECHANISMS IN INDIA

India's environmental statutes mainly employ the system of licensing and criminal sanctions to preserve the natural resources and regulate their use. Civil compensation is only recovered in suits filed by private individuals and this remedy is negligible when compared to the other remedies. Under the various statutes enacted for the protection of environment, the authorities are empowered to even shut down polluting industries and stop the supply of water and power. At least in theory, this enforcement method assures quick results because it combines the judicial and administrative powers in a single authority that can take quick decisions. However in practice the case is different. As opined by Shyam Divan, the performance of most of these authorities, such as pollution control boards, forest authorities or town planning authorities has been disappointing because they are not very proactive in most cases unless there is a judicial supervision.

The legislatures and executive measures in India are adopted in accordance with the constitutional policy and also in pursuance of various declarations, conventions, and instruments adopted by India. India has been proactive in the formulation of policy into binding rules of conduct as well the constitution of various authorities to execute and achieve the goal of reduction of GHG emission. A survey of environmental legislation in India reflects our concerns to the environment. The following section outlines the various legislations, which are presently relevant in this regard.

Legislative Powers under the Indian Constitution and Environmental Protection

The Constituent Assembly that drafted the Constitution of India did not discuss specifically about environmental matters and its inclusion in the Constitution. It was the Government of India Act, 1935 that had in fact discussed about the environmental matters, particularly with reference to the distribution of environmental subjects into three lists. However, the Forty Second Amendment to the Constitution of the year 1976, which was in fact incorporated as a result of the Stockholm Declaration, introduced certain provisions with the aim of protecting the environment. Nevertheless, such provisions are unique features of the Indian Constitution, when compared to other national constitutions. The Directive Principles of State Policy in Article 48A[9] and the Fundamental Duties in Article 51-A (g)[10] expressly require the state and its citizens to act for the protection of environment.[11] However, the fact that the Directive Principle State Policy (DPSP)[12] and Fundamental Duties Chapter are non-enforceable in a court of law under Article 32 or 226, remains an obstacle for the effective enforcement of these provisions. But, at the same time the Indian judiciary has increasingly interpreted the Article 21[13] of the Constitution to mean that 'Right to Life' includes various aspects of the concept of clean environment. Regarding the importance of the DPSP the Supreme Court of India in *Sachidananda Pandey's* case held thus:

> "Whenever a problem of ecology is brought before the Court, the Court is to bear in mind, Article 48-A of the Constitution of India….and Article 51 A (g) …When the Court is called upon to give effect to the Directive Principle and the Fundamental Duty, the Court is not to shrug its shoulders and say that priorities are a matter of policy and so it is a matter for the Policy-Making authority. The least that the court may do is to examine whether appropriate considerations are borne in mind and irrelevances excluded. In appropriate cases the court may go further, but how much further will depend on the circumstances of the case".

Under India's unique federal form of the government, the legislative power is shared between the Central Government (the Parliament) and the State Governments (State Legislatures) according to Part XI of the Indian Constitution. While the Parliament makes law for the entire country, the state makes laws for that particular state. Article 246 of the Indian Constitution bifurcate the subject areas of legislation between the Parliament and the state legislatures. Similarly, the Seventh Schedule of the Constitution provides for three lists. The List I (also known as Union list) identifies areas where the Parliament only can make laws, whereas List II (also known as State List) contains areas where the states can make laws. While List I includes areas such as foreign affairs, atomic energy, interstate transportation, shipping, major ports, regulation of air-traffic, regulation and development of oilfields, mines and mineral development and interstate rivers; the List II includes subject areas such as public health and sanitation, agriculture, water supplies, irrigation and drainage and fisheries. List III also known as Concurrent List contains 52 areas where both Parliament and State Legislatures can enact laws. This includes forests, the protection of wildlife, mines and mineral development not covered in the Union list, Population Control and Family Planning, Minor Ports and Factories. The parliament, in addition to those subject areas detailed in List I may also legislate in the following circumstances;

(a) The Parliament has the residual power under the Indian Constitution, to legislate on subjects not covered by any of these three lists.[14]

(b) The Parliament may also legislate on any matters that are important from the perspective of 'national interest' on any matters that are enumerated in the state list.

(c) It may also enact laws on the state subjects, for states whose legislatures have consented to central legislations. One example for such a central legislation is the Water (Prevention and Control of Pollution) Act, 1974, when twelve states gave their consent for such legislation.

The Forty Second Amendment to the Indian Constitution in the year 1976, also made new entries like 'Population Control and family Planning' in the Concurrent List, while 'Forests' and 'Protection of Wild Animals and Birds' were moved from the State List to the Concurrent List. Looking from the environmental perspective, this division of legislative power is important. It is because some environmental problems such as sanitation and waste disposal can be effectively tackled at the local level rather than at the central level, whereas few other issues, such as the water pollution and the wildlife protection can be better managed by statutes enacted at the central level.

Many changes followed the *'Stockholm Spirit of Compromise'* across the globe. Many environmental statutes were enacted in various countries. It is observed that during 1971-75, thirty-one major national environmental laws were enacted in countries that are members of the Organization for Economic Cooperation and Development (OECD) alone, when compared to just four during the period 1956-60, ten during the years 1960-65 and eighteen from the year 1966 to 1970. This trend was followed in India also. The Government with the help of Article 253[15] of the Indian Constitution read with Entry 13[16] of the Union List /List I have legislated many statutes for the protection of environment. Article 253 empowers the Central Government to enact laws on virtually anything, including areas that are listed in the State List, if it is for implementing an international obligation. Using these powers the Parliament enacted the Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986. The Preamble to both these Statutes says that they were enacted to implement the decisions reached at the United Nations Conference on Human Environment, 1972, the Stockholm Conference.

India's Federalism and Environmental Protection

The above-analysed federalist structure of law making in India also has created many tensions, particularly the ones related to the regional development and the preservation of natural resources. For example, the tensions were evident in regulating the coastal development and the commercial exploitation of mineral resources. Another example for such a tension is in the case of town planning, building regulations and local zoning. As a result, the laws pertaining to these subjects are found in the law books of various states. But there were many problems with these State Laws. Some of them were extremely ambiguous while others were rarely enforced. To cure such defects with regard to regulating the construction in coastal zones, the Central Government imposed the Coastal Zone Regulations in 1991, which was amended in 2000. This was subsequently replaced by the Coastal Regulation Zone (CRZ) Notification, 2011. The CRZ regulation restricts construction in a 500 metre wide strip along the Indian coast, which provoked many coastal states. These states were disturbed by the sweeping nature of power as assumed

by the Central Government with the help of Article 253 read with Item 13 in List 1, particularly on a subject in which they are entitled to make laws according to the constitutional scheme. However in *S. Jagannath* v. *Union of India*[17], the Supreme Court of India ratified the power of the Central Government to make such laws since it was construed as another international obligation on India as a result of the *Stockholm Declaration.* It may also be noted that the Court went to extent of saying that CRZ Regulations 'shall have an overriding effect and shall prevail over the law made by legislatures of the States.' Despite such efforts, the fact that there is no single entry in List I of Schedule XII pertaining to environment makes the task of law making difficult. Currently, most of the subjects are included in the state list, which is one of the fundamental reasons for disparity in the effectiveness of laws made in India.

The following section enumerates certain legislations made by the Parliament with the aim of protecting the environment.

Public Nuisance and Civil Remedies and the concept of Social Minimum

The common law concept of nuisance is one of the most traditional remedies available against the environmental protection. This also has been recognized by some of the environmental statutes in India, which gives it the colour of a statutory remedy as well. For example, the definition of pollution under the water (Prevention and Control) Act, 1974 says that contamination of water can be said to be pollution, when it may or is likely to create a nuisance.[18] In India, the law of easements ensures the owner of a land, beneficial enjoyment thereof free from air, water or noise pollution. This enables an aggrieved person to challenge any act of pollution and to move to the Court under the provisions of the Code of Civil Procedure, 1908 (CPC)[19] and also under section 133 of the Code of Criminal Procedure, 1973.

Under section 9 of CPC, whenever there is a nuisance created through pollution, the court can order relief in the form of damages, injunction, interim orders, declaration and decree. When the harm affects many people, this attains the character of a public nuisance. In such cases, the Advocate General or anyone with the leave of the court or two or more persons can institute a suit irrespective of whether the special damage is caused to such people. In such cases, the remedy may be either a declaration or injunction or any other relief as may be appropriate in the circumstances of the case. In *Perumal Naicker* v. *Rathina Naicker case*, the Court held that the provision that deals with public nuisance is a combination of both civil and criminal remedy, which makes both the civil action and the criminal action possible in such cases. Though the law of nuisance is a 'reservoir for class action' it is not widely used in India. It is necessary to develop this remedy as a potent weapon against ecological maladies that may spring up in the form of

public nuisance. The lack of awareness and the lack of environmental consciences make these provisions a failure, which shows that there are no proactive steps from the government of India in ensuring the protection of environment in this regard.

In the series of *Bhopal Gas Tragedy* cases, another strategy was used to overcome the problems in the Class Actions. The Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985, was adopted by the Parliament conferring on the Central Government, the exclusive right to represent the claims of the victims in cases involving issues of *parens patriae*. The main purpose was to secure the claims of the victims that are dealt 'speedily, effectively, equitably' and not to the best advantage of the claimants. However, in this case, which was the worst industrial disaster of its kind in the human history, the Government of India, severely failed in not only preventing the accident but also in doing justice to the victims. It is a clear case of the failure of the working of the Environment Impact Assessment in India. The facts show that when a license was applied for the starting the operations of the carbide plants, many factors were overlooked or ignored. There were many houses in the locality, the Bhopal railway station and a busy market situated a couple of kilometers from the proposed site. None of these factors were taken into consideration when the license was issued. The licensing authorities were not interested in the future effects and the availability of safety mechanisms in the site. It was also alleged that the approval was given to a plant, whose design was defective from the standpoint of safety and that a project of identical design had reportedly been rejected by Canada. Moreover, many accidents were frequently reported, but no action was taken. There was no transparency in the operation of the plant and everything was masked in secrecy. It is reported that even the doctors in the carbide factory hospital did know the antidote to the *Methyl Isocynate* that caused the accident.

The Bhopal disaster discloses the malady of a legal system that failed to stress on the mandatory need for an open, fair and effective Environment Impact Assessment (EIA). This incident is an indication of the failures of our legal and governance system. A system that is corrupt, unscientific and ineffective. The lesson unlearned from the Bhopal disaster is particularly alarming, considering the fact that India is planning and opening up nuclear power plants in various parts of the country.

The Indian Penal Code, 1860 also makes the public nuisance an offence. Section 268 of the Indian Penal Code, 1860 states that "a person is guilty of a public nuisance who does any act or is guilty of an illegal omission which causes any common injury, danger or annoyance to the public or to the people in general, who dwell or occupy property in the vicinity, or which must necessarily cause injury, obstruction, danger or annoyance to persons who may have occasion to

use any public right. A common nuisance is not excused on the ground that it causes some convenience or advantage." Similarly, any negligent act resulting in an infection that is dangerous to life[20] and the acts of food adulteration are also offences coming under the purview of IPC. Also, contaminating the water of a public spring or reservoir to make it unfit for ordinary use or poisoning the atmosphere to the detriment of persons living in the neighbourhood are also punishable offences under the Indian Penal Code. Negligence in the use of poisonous substance, fire and combustible matter, explosive substances and machinery are also punishable offences, if it results in danger to the human life.

Similarly, the Code of Criminal Procedure, 1973, also contains provisions that can be used for environment protection. Under section 133 of the Cr.PC[21] an executive magistrate can interfere and remove a public nuisance in the first instance with a conditional order and then with a permanent one. He can adopt immediate measures to prevent the danger or injury of a serious kind to the public. In *Deshi Sugar Mill* v. *Tupsi Kahar*, the Patna High Court categorically stated that under this provision the District Magistrate is empowered to take action. However, this right has been used by only in a few cases. In some of them, the respondents instead of removing the public nuisance went up to the Supreme Court of India spending many thousands of rupees. Thereafter in *Municipal Council, Ratlam* v. *Vardhicha* the residents of *Ratlam Municipality* was suffering for a long time from pungent smell emanating from open drains. The odour caused by human excretion in slums and the liquids flowing on to the street from distilleries forced the people to approach the magistrate for a remedy. Following a direction from the magistrate to remove the drain, the Municipal Council, instead of complying with the order challenged it right up to the Supreme Court. The Supreme Court emphasised the responsibilities of local bodies towards the protection of environment and developed the law of public nuisance in the Cr.PC as a potent instrument for enforcement of their duties. According to the Court, the imperative tone of these provisions demands a mandatory duty also. The court held that when an executive magistrate passes an order under section 133 of the code of criminal procedure, the local administration cannot take the plea of financial inability in implementing such order. Justice Krishna Iyer held that the section 133 operates against the local administration regardless of cash in their funds, because human rights have to be respected by the state irrespective of budgetary provisions. He observed:

> "Decency and dignity are non-negotiable facets of human rights and are first charge on the local self-governing bodies. Similarly, providing drainage not pompous and attractive, but in working condition and sufficient to meet the needs of the people-cannot be evaded if the municipality is to justify its existence."

The verdict in *Ratlam* is a significant milestone in the path of environmental protection. However, the doubt remains is that how many local bodies will actually have the financial ability to go for such an infrastructure project. This might make similar orders from the court unenforceable. Another issue is pertaining to the interest or awareness of executive magistrates in effectively using this provision.

Protection of Forests and its Habitat in India: A Critical Analysis from a Fairness Perspective

Forests help in maintaining the ecological balance. They render the climate equitable, add to the fertility of the soil, prevent soil erosion and promote the perennial stream flow in the rain fed rivers. They also shelter wild animals, preserve the gene pool and also protect the tribal population. Forests also bring revenue to the state, supply raw material to the industries, and act as a source of fuel and fodder. It is the same reason due to which forest management always gives rise to conflicts. An example of such a conflict is the developmental activities like the construction of dam in a forest area that raises questions as to the violation of forest laws. The following is an enumeration of various laws pertaining to forest in India.

The Forest Act, 1927[22] is a comprehensive legislation relating to the forest management that consolidated all the pre-existing laws. This Act, a product of British colonial days reflects the exploitative intentions of the colonial and the feudal society of the time, rather than the environmental and ecological interests. Based on a revenue-oriented policy, its main object is to regulate the dealings in forest produce and augment the public exchequer by levy of duties on timber. This Act contains provisions pertaining to the reserve forests, whereby the state government could constitute any forestland or wasteland as a reserve forest by notification. Thereafter, the government would be entitled to any product of such forests. Activities in the reserve forest are regulated. Rights over land and rights to forest produce and watercourse can be exercised only subject to regulation. Any clearing or felling of trees, trespass *etc* are strictly prohibited.

The second kind of forest described under the Act is the protected forest. It is observed that, through the division of forests into reserve forest and protected forest and the processes of governmental control over the natural resources give an impression that the Act is environment oriented. However the impact of the Forest Act was so devastating that it shook the foundation of the ecological system. Such a process of reservation also deprived the tribal population of their traditional rights and privileges. As some authors said the "tribal looked upon forest, the nature's gift, as their own property and they had unfettered freedom to do so as they pleased. But the situation continued to change after the enactment of Indian Forest Act. The tribal who is supposed to be the master of forest is now no more than a wage earner." Reservation of forests also led to their commercialisation with the intention to supply raw materials for industries. By an inequitable

privatisation of forest resources in favour of a small section of the society, the law infact, worked against the interests of the rural and tribal population whose very existence was, to a substantial extent, dependent upon those resources.

The Forest Act does not look at the forests from the ecological perspective. In this context it is commented that "the revenue oriented approach, not conducive to the efficient eco-management continued for a long time…the repercussions were rampant, illegal felling and encroachment." However the Indian Judiciary is attempting to give a new phase to the Forest Act, 1927. In *State of Tripura* v. *Sudhir Kumar Ranjan Nath,* the Supreme Court said that the Indian Forest Act is one that intends to preserve, protect and promote the forest wealth in the interest of the nation. This is entirely a new eco-friendly approach, which of course, is different from the purpose that it had when it was enacted.

The wide spread concern for large-scale deforestation resulting in the ecological imbalance and the environmental degradation made the policy makers to think over a new law. Forests have been identified as the richest source, amongst the natural resources, to be exploited for commercial gain as well as for the infrastructure development by the colonial rulers. Hence, the British, in order to monopolize the control over forest, introduced the first Forest Act, 1865, having the right of ownership on themselves. Such protectionist approach failed because the local people lost interest in taking care of the forests, as they were not the direct beneficiaries. Post–Colonial governments also continued this practice until it was realized to have a law in the form of Forest (Conservation) Act, 1980 providing for the conservation of forests. The underlining object of the law was to impose restrictions on use of forestland for non-forest purpose and also to protect and conserve the green cover essential for the trapping of carbon-dioxide.

The Forest Conservation Act restricts the de-reservation of forest or use of forest or forestlands for non-forest purpose. It says that no state government can without the prior approval of the central government, make any order to (i) de-reserve forest; (ii) use any forest land for non-forest purpose; (iii) lease out forest land to a private agency (iv) cut naturally grown trees in forest land for the purpose of using it for reforestation. The phrase 'non-forest purpose' may also include clearing of forest for the cultivation of tea, coffee, spices rubber, palms *etc*.

Similar to this another important milestone in the law regarding forest is the Supreme Court's decision in *TN Godavarman Tirumilpad* v. *Union of India.* The concept of sustainable development as defined by the international law was illustrated specifically with regard to the forests. The decision of the court may be summarised as follows:

(i) Forest includes the area noted in the government records as forest irrespective of ownership

(ii) Mining licence in such an area without the prior approval is the violation of the Forest Conservation Act, 1980. All ongoing activities under such invalid licence must cease. The State governments will have to take the necessary remedial measures.

(iii) Running sawmills of any kind is a non-forest activity. All timber mills within a distance of 100 kms from the border of the state of *Arunachal Pradesh* are to be wound up.

(iv) Responsibility is imposed on each state government to prepare a report on the number of sawmills; actual capacity of timber mills, proximity to the nearest forest and their sources of timber.

(v) Complete ban on felling of trees in the tropical wet evergreen forest in Arunachal Pradesh is essential due to their significance to maintain ecological balance and preservation of biodiversity.' Felling of trees in the forests in other states, except in accordance with permission is suspended.

(vi) Movement of cut trees and timber is banned with the exception of certified timber required for defence purposes.

(vii) Each State Government should constitute an expert committee to identify the forest areas and to assess the sustainable capacity of the forest *qua* sawmills.

(viii) In the State of *Jammu and Kashmir,* no private agencies should deal in felled trees or in timber. No permission should be given for sawmills within a distance of eight kilometres from the boundary of demarcated forest area.

(ix) In *Tamil Nadu,* the tribals who are a part of the social forestry programme in respect of *patta* lands other than the forests may continue to grow and cut trees according to the government scheme and in accordance with the law applicable.

(x) Plantations are not allowed to expand further and encroach upon forests by way of clearing or otherwise.

When the case came up before the court, a high power committee was constituted to oversee the strict and faithful implementation of its orders. The *Godavarman's* case is important in many respects. Similar to section 49-B (3) of the Wild Life Protection Act, 1972, which restricts trade and commerce in wild animals, animal articles *etc.* only through a state corporation, *Godavarman's* case stipulates that sale of timber and felled trees shall also take place through state corporations, and not through private channels. In furtherance the court also appointed a Central Empowered Committee (CEC), which would function for five years, studying all the problems relating to conversion of forest for non-forest purposes and report the same to the Court.

Another major development is the enactment of the Biological Diversity Act, 2002. India is one of the few countries to have enacted such a legislation. The Union Ministry of Environment and Forest (MoEF), the nodal agency for implementing provisions of CBD, has developed a strategy for biodiversity conservation at macro-level in 1999 and has enacted the Biological Diversity Act in the year 2002. The Act provides for the conservation of biodiversity within species, between species, ecosystem and the traditional knowledge connected therewith. This Act primarily aims at giving effect to the provisions of Convention on Biodiversity, 1992, *i.e.* conservation of biological diversity, sustainable use of its components, fair and equitable sharing of the benefits arising out of utilization of genetic resources, and also regulates the access to biological resources and associated traditional knowledge. Under this law, three tier bodies are constituted for the effective enforcement of its provisions.

Another very significant feature of the Act is that it lays down the duty of the Central Government to develop the national strategies, plans, and programmes for the conservation, promotion and sustainable use of the biological diversity including the measures for identification and monitoring of areas rich in biological resources. It speaks of promotion of *in situ* and *ex situ* conservation of biological resources, incentive for research, training and public education to increase awareness with respect to the biodiversity. Under section 37 of the Act, the state government may, in consultation with the local bodies, notify areas of biodiversity importance as *biodiversity heritage sites*. The Act also empowers the Central Government, in consultation with the concerned State Government to notify any species which is on the verge of extinction or is likely to become extinct in their near future, as a threatened species and prohibit or regulate the collection thereof, for any purpose and take appropriate steps to rehabilitate and preserve those species. The Biodiversity Act has multifaceted scope and utility ranging from regulating the activities in biodiversity rich area to casting duties on the government to adopt measures to conserve the diversity in the living organisms.

Another important issue that is crucial from the fairness perspective is the rights of forest dwellers. According to the policy of the British, they had no right to access the resources of forests. When a developmental activity takes place, the location of development projects on or near forest area raises complex questions such as conflict between the short-term benefits and the long term tangible and intangible losses, the social impact, rehabilitation of the local population and re-forestation. In *Banwasi Seva Ashram* v. *State of Uttar Pradesh* the court held that "indisputably, forests are a much wanted national assets. On account of the depletion thereof the ecology has been disturbed; climate has undergone major changes and rains have become scanty. These have long-term adverse effects on national economy as also on the living process. At the

same time, we cannot lose sight of the fact that for industrial growth and also for the provision of improved living facilities, there is a great demand in this country for energy such as electricity." The court further said that, the *oustees* of such developmental activities should be rehabilitated after examining their rights. When the matter came up again before the Court, it was held that the state has the responsibility to find out alternative plots, render resettlement and subsistence allowance, give free transportation, reserve jobs and provide facilities of roads, water supply, health care and electricity.

However, in *Pradeep Krishen* v. *Union of India*, the Supreme Court held that "if one of the reasons for the shrinkage is the entry of villagers and tribes living in and around the sanctuaries and the national parks, there can be no doubt that urgent steps must be taken to prevent any destruction or damage to the environment, the flora and fauna and wildlife in these areas." The Court also ruled that "…while every attempt must be made to preserve the fragile ecology of the forest area and protect the Tiger Reserve, the right of the tribals formally living in the area to keep body and soul together must be given proper consideration. Undoubtedly, every effort should be made to ensure that the tribals, when resettled, are in a position to earn their livelihood." The same issue again came up before the Supreme Court in *Narmada Bachao Andolan* v. *Union of India.* It was alleged that several villagers and few towns in Gujarat and Rajasthan might be benefited by the augmentation of water supply, when the height of the reservoir was raised. However, the rehabilitation of tribal people ousted from their habitat was a serious problem. The Supreme Court insisted that the tribal should be given better land at an equal measurement. At the same time, the major obstacle in the case of the resettlement of the tribal people is the non-enforcement and rampant corruption. Whatever may the laws, only a few are implemented and even among the ones that are implemented only a very few benefits reach the tribal people.

An important development in this regard is the enactment of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2007. This Act explicitly identifies the community-based conservation as a legitimate right. The Act also has specific provisions for empowering those who hold forest rights, checking activities detrimental to the forest and biodiversity. The forest people and the forest have inalienable linkages and having regard to the symbiotic relationship between the tribal people and forests, the primary task of all agencies responsible for forest management should be to associate the tribal people closely in promotion, regeneration and development of forests. The Act also focuses on the need to give special attention to the alternative sources of domestic energy on a subsidized basis to reduce the pressure on the existing forest areas. The holders of customary rights and concessions in

forest are motivated to identify themselves with the protection, conservation and development of forests from which they derive out their livelihood and benefit. This would in return demand that they must keep the biodiversity intact.

Similarly, the Wild Life (Protection) Act, 1972 is enacted in pursuance to Article 252(1) of the Constitution of India[23] and is the first of its kind providing for the protection of wild animals, birds and plants. It is interesting to note here that the Act was enacted at a time when there was no much discussion about the climate change. Hunting of Wild Animals specified in the Schedules under the Act is prohibited unless the animal has become dangerous to human life or is disabled or diseased as to be beyond recovery or is required for education or research purposes. Further, the Act prohibits picking, uprooting, damaging, acquiring or collecting any specified plant, from any forest land unless permitted by the concerned authority for certain definite purposes. The Central and State Governments may by notification, declare any such area as sanctuary or park if the idea is of adequate ecological, faunal, floral, geo-morphological or of natural significance, for the purpose of protecting, propagating or developing wild life or its environment. However, despite these provisions the situation is really panicky. More and more wild animals are being hunted and many are facing the threat of extinction. This clearly shows that the Wild life Act has not produced its desired results.

Control of Pollution and Indian Environmental Law

Various statutes have been enacted in India aiming at controlling pollution. It is in fact one of the traditional responsibilities of a local body to ensure cleanliness of water and air in its territories. They can exercise regulatory control to prevent and abate nuisance from the water pools, which adversely affects agriculture. Contaminated water supply, noxious vegetation, harmful dust and smoke or unsanitary conditions of buildings *etc.,*[24] were of much concern to the local bodies and sanctions were imposed against persons who violated the regulations. Below given are some of the important legislative measures made for curtailing pollution.

The Water (Prevention and Control of Pollution) Act (also known as the Water Act) was enacted in the year 1974. This development was invoked in the year 1974 during which period the country was in the path of industrialization and urbanization in pursuance of Article 252(1) of the Constitution of India for enforcing effluent standards for factories discharging pollutants[25] into water bodies. Pollution of streams, rivers and other water bodies reduced the quality of vegetation and other living creatures in water. Such consequences had far reaching impact on the society. The authorities created under the Water Act had the responsibility of implementing this duty assigned to them. Prior to the amendment in the year 1988, the enforcement under Water Act was through criminal prosecutions initiated by the Boards. After the Amendment, the Board may close

a defaulting industrial plant or withdraw its supply of power or water. However, the discretion to give or not to give consent for the discharge of trade effluents is vested in the Pollution Control Boards. No doubt, such a regulatory power is the most potent weapon in the attempt to control of the pollution. The power to withdraw consent, when conditions are violated is also treated as an effective measure under the Act. However, the conglomeration of too many powers in the Board seems to reduce the effectiveness of the Board with respect to its various powers.

Another legislation that has to be read along with the Water Act is the Water (Prevention and Control of pollution) Cess Act, 1977. The Cess Act creates certain economic incentives for pollution control through a differential tax structure with high rates applicable to polluting units and to pay increased cess for water consumption. However, both these legislations have also been not very ineffective to prevent water pollution and as a result India's water bodies are being increasingly polluted. The Comptroller and Auditor General's Report in the year 2011 on the subject make it very clear that this statute has been a futile attempt for all these years.

Similarly, the Air (Prevention and Control of Pollution) Act (also known as the Air Act) was enacted by the Parliament in the year 1981 to implement the decisions taken at the *Stockholm Declaration.* The Air Act provides for prevention, control and abatement of air pollution with a broader approach for the preservation of natural resources on the earth including the preservation of quality of air and the establishment of the Air Pollution Control Boards to carry out its objectives. It says that 'emission' means any solid or liquid or gaseous substance coming out of any chimney, duct or flue or any other outlet. The Authorities created under the Act *viz.,* Central Air Pollution Board or State Air Pollution Control Board are authorized to lay down standards for emission of air pollutants into the atmosphere from industrial plants, automobiles or from any other source not being a ship or an aircraft. The Boards are empowered to issue directions to the persons violating the law and also lodge complains against such persons before a competent court of law The air Act also stipulates that all industries operating within the designated 'air pollution control areas' must obtain consent from the State Boards. Though the 1987 amendment to the Air Act strengthened the enforcement mechanisms, particularly by increasing the penalties for violation, even today it remains to be an ineffective tool for reducing the emission in many respects.

Further, to implement the decisions of the *Stockholm Conference*, in so far as they relate to the protection and improvement of the human environment and the prevention of hazards to human beings, other living creatures, plants and property, the Environmental Protection Act (hereinafter referred to as the EPA) was enacted in the year 1986. The EPA is an umbrella legislation that provides a framework for the central government for the coordination of activities of various authorities created under the special legislations such as the Air (Prevention and Control

of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974 etc. The EPA is a comprehensive legislation empowering the central government to take measures to protect and improve the quality of environment by constituting an authority, which was non-existent under the previous legislations. This feature distinguishes the EPA from other laws. Further, the Act empowers the Central government to make rules for carrying out the purposes of the Act. By invoking these powers, the Central Government has constituted several authorities such as the Environment Pollution (Prevention and Control) Authority, Loss of Ecology (Prevention and Payment of Compensation) Authority, Environment Impact Assessment Authority *etc*; with different terms of references to lessen the pollution load and also suggest viable options to avoid the impact of restrictions imposed to protect and improve the environment.

Under the rule making powers, the central government, has also made rules and regulations covering the biological diversity[26]and the Ozone Rules, giving the Act, a status of umbrella legislation. The Ozone Rules are relating to the control of ozone depletion[27] and provide for the prohibition of new investments with ozone depleting substances[28], regulation of sale, purchase, use of ozone depleting substances and the control of production[29] and the consumption of ozone depleting substances. There is also the regulation of import, export and sale of products made with or containing ozone –depleting substances.[30] These regulations are also on recovery and destruction of ozone depleting substances and on manufacture, import and export of compressors.[31]

4. FAIRNESS DIVIDE AND INDIA'S ENVIRONMENTAL DEGRADATION

Despite this large number of laws and policies and the presence of an active judiciary, India's environment is still under threat. The state has failed miserably in implementing these laws and policies. As M.C. Mehta says, "There is no excuse good enough, no obstacle obtrusive enough, and no circumstance restrictive enough to exonerate the government from failing to perform its statutory duty to arrest the environmental decline Out of the three branches of the government, *viz;* the legislature, the judiciary and the executive, it is the executive branch that is main culprit by 'passively allowing or actively contributing' to the environmental tragedy in India.

Though there are many reasons for the failure of the executive branch, the issue of corruption stands out as the most threatening. According to the *Transparency International*, India is on the top of the list of the 'most corrupt' nations. The plethora of bureaucratic rules and regulations (in other words *red tapism*) provides ample scope for the executive branch to be corrupt. Though corruption exists in every country, the situation in India is different. As observed by the *Centre for Science and Environment*, "Experiences from abroad…have something to teach us. The United States, Japan and South Korea are among the most dynamic countries in the world, but their higher political echelons are riddled with corrupt practices. What differentiates

these countries from India is that once a politician is enmeshed in a corruption scandal, regardless of whether that politician is a president or prime minister, he/she pays a price. However, this has not been the practice in India. Here the corrupt person are protected by all possible means.

Corruption has its huge impact on rendering the *social minimum* to the needy. It is the antithesis of human rights and constitutional freedoms. It also has its impact in making the system unfair. Corruption, in environmental decision making processes, directly encourage the spread of pollution and the liquidation of natural resources, but at the cost of the nature itself. It can be easily said that corruption has the most direct impact on fairness because for those who have the resources to bribe, corruption involves only a 'transaction cost', but for the poor who cannot afford the 'transaction cost' corruption is tantamount to oppression and violence.

Corruption is largely becoming the greatest challenge in the fight against climate change also. The efforts of offsetting the effects of climate change involve huge expenses, which according to some estimates would be almost equal to US $ 700 billion by the year 2020. Most of these funds, according to experts, would flow through new and uncoordinated channels. The risks of corruption are also high because of the level of complexity, uncertainty and novelty that surrounds climate issues. Early evidence presented by the *Transparency International* suggests that there are many regulatory grey zones and loopholes that are at the risk of being exploited by the corrupt interests.

In India also, the climate change is becoming a new haven for the corrupt. An example is the Kyoto protocol's Clean Development Mechanism. As discussed earlier in this thesis, India is one of the highest beneficiaries of CDM by gaining almost 20 percent of the global CDM projects. In this context, it is observed that, some business interests and civil society groups have been quietly lobbying with the government in recent years to unduly take advantage of important climate related financial opportunities.

Corruption in climate change that is offsetting the fair procedures also challenges the idea of justice. Since it is the indigenous and rural poor communities in remote locations, the urban poor living in precarious settlements, and displaced persons who require resettlement *etc*., who bear the brunt of the effects of climate change; they are meant to be the main beneficiaries of adaptive action; and yet they are usually the most marginalized voices in the political system. And the main reason is corruption. This starkly highlights the need for a fair, transparent and accountable climate governance.

5. CONCLUSION

To conclude, acting on climate change is a national propriety; we need to act, for our own sake, not because of the sake of anyone else. We need an aggressive domestic agenda that

addresses the vulnerabilities, the climate change may pose, an agenda-that produces substantive policy action in the short as well as the medium term. But, such an aggressive domestic agenda continues to be a myth. The environmental laws and regulations that would help the climate change mitigation, largely remains as an ineffective tool in that direction. The issues such as, ambiguity in the legislative power under the Indian Constitution, corruption, lack of awareness among the general public, lack of coordination *etc.* create a fairness divide in the efforts of mitigating the effects of climate change. The system also has failed in taking the *social minimum* to the various sub-national groups, who bear the brunt of the effects of climate change as noted above. The basic procedural requirements such as Environmental Impact Assessment and public participation in the environmental decision-making processes are not followed at all.

This fairness divide that exist in environmental and climate change actions in India can be better illustrated with the example of the case of the displaced tribal people of *Narmada valley* Project where even after more than two decades the displaced people are yet not rehabilitated.[32] As, Mehta says; "The truth is that the environment is not the government's priority. The poor are not a priority. Our international commitments are not a priority. Our public health is not a priority. Our fundamental rights are not a priority. Instead our leadership is narrowly focused on rapid, unsustainable developmental programmes, on expansion of nuclear energy, on exploitation of resources, and on building unviable large-scale dams."[33]

End notes

1 Key developing countries on the basis of their GDP growth rates in recent times includes; India, China, Brazil, South Africa and Mexico.

2 According to the Human Development Index 2011, the following are the positions of these key developing countries: Brazil-85; India-134; China-101 and South Africa-123.

3 The developing countries argue that, "the history of world's economic development indicates that economic growth and GHG emissions follow a certain rule. Emissions of CO2 and other GHGs increase as the economy develops. When the development reaches a certain level, CO2 emissions will level off and the turning point will appear. After a period of stationary phase, the emissions start to fall." They feel that it is unfair and unreasonable to ask them to start absolute emission reduction before achieving such a stationary phase.

4 Members of the BRICS club.

5 In India, Article 53 of the Constitution of India vests the executive power in the President of India, though article 74(1) requires the President to act in accordance with the advice of Council of Ministers. Further the legislative power is contained in the Schedule 7, which includes three lists (List I-Union List; List II-State List and List III-Concurrent List), each of which set out the matters in respect of which relevant federal and state legislatures can make laws. Article 73 and 246(1) read in conjunction with the relevant items on the Union List, give the executive all the powers to negotiate, enter into and ratify treaties. Article 53 requires that the entry into and implementation of treaties and other international

obligations with other countries be carried out in the name of the President. It is important that in India, states do not enjoy the power to enter into treaties in India. It is the exclusive power of the federal government. It is also important to note that the Parliament has, by virtue of articles 245 and 246 read in conjunction with Entry 97 of List-I, residual power to make laws with respect to any matter not mentioned in List-II and List-III. Further, article 253 of the Constitution provides that the Parliament has the power, "to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or convention with any other country or countries or any decision made by any international conference, association or other body." It is also important to note that the negotiation and entering into treaties and other international agreements are not listed in either the state or concurrent lists. In most cases, ratification is sufficient to make the terms of the treaty a part of India's domestic law. However, legislative implementation of these treaties is required where the terms would affect the rights of individuals, result in public expenditure or result in changes to existing domestic law. However, the fundamental question was relating to importance of domestic law in relation with international law. The Indian Judiciary in this regard, in *Birma* v. *State,* AIR 1951 Raj. 127, held that international law do not form part of the law of the land unless expressely made so by the legislature. Further in *Maganbhai Ishwarbhai Patel* v. *Union of India*, AIR 1969 SC 783, Justice Hidayatullah held that "…the position maybe summed up thus: there is a distinction between (1) the formation, and (2) the performance of the obligation. The first is an executive act, the second a legal act if a law is required. The performance then has no force apart from a law that is to say unless the Parliament assents to it and the Parliament then accords its approval to the first executive act. The treaties created by executive action bind the contracting parties, and therefore, means must be found for their implementation within the law." In *P.B. Sawant* v. *Union of India*, AIR 1994 Bom. 323, the court again addressed the nuances regarding treaty-making power in India while it held that entering into treaties was a policy decision which the courts should not interfere under article 226. *Birendra Bahadur Pandey* v. *Gramophone Co. Of India Ltd*, AIR 1984 Cal 69, the court held that in India "…the treaty or International Protocol or convention does not become effective or operative of its own force as in some of the continental countries unless domestic legislation has been introduced to attain a specified result. Once, the Parliament has legislated, the Court must first look at the legislation and construe the language employed in it. If the terms of the legislative enactment do not suffer from any ambiguity or lack of clarity they must be given effect to even if they do not carry out the treaty obligations. But the treaty or Protocol or the convention becomes important if the meaning of the expressions used by the Parliament is not clear and can be construed in more than one way. The reason is that if one of the meanings, which can be properly ascribed, is in consonance with the treaty obligations and the other meaning is not so consonant, the meaning, which is consonant, is to be preferred. Even where an Act had been passed to give effect to the convention which was scheduled to it, the words employed in the Act had to be interpreted in the well established sense which they had in municipal law."

[6] The term *ecological shadow* came into prominent usage when it was for the first time used in Jim Macneil, Peter Winsemius, and Taizo Yadushiji, *Beyond Interdependence; The Meshing of the World's Economy and the Earth's Ecology.* The book was concerned with the interconnections across boundaries and suggested that industrialised countries "draw upon the ecological capital of all other nations to provide food for their populations, energy and materials for their economies and even land, air and water to assimilate their waste by-products. This ecological capital, which may be found thousands of miles from their regions in which it is used, forms the shadow ecology of an economy…In essence, the ecological shadow of a country is the environmental resources it draws from other countries and the global commons." If the state that draws resources from elsewhere does not in some way ensure the sustainability of the resource base that it draws upon, then extraction of resources causes a shadow to fall over the ecology of another state. According to Jennifer Clapp and Peter Dauvergne, it is elaborated

by saying that the ecological shadow is more than merely the aggregate of trees, soil, minerals and air or an area that is destroyed; it should also include the price paid for this destruction and the related impacts on resources management.

[7] Therefore, it is argued that "India's position, …stands vindicated as it is not committed to any legal obligation but, volunteers to reciprocate as a responsible nation and member of all international conventions adopted to cop up with the situations.". The per capita emission for India would still be 2.56 tons-CO2 equivalent in 2030, which would be significantly below the global average.

[8] The Energy-GDP elasticity during 1953–2001 has been above unity. The total installed power capacity in the country as on March, 2008 is 1,43,061 MW, 64.2% of which is thermal, 25.1% hydro, 7.8% renewable, and around 4% nuclear energy. India plans to enhance energy capacity by 78,520 MW by 2012-13, to electrify the rest of 20% of villages, to meet the additional demand.

[9] Article 48 A says thus: "Protection and Improvement of environment and safeguarding of forests and wild life: The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country."

[10] Article 51 A (g) says thus: "It shall be the duty of every Citizen in India, to protect and improve the natural environment including forests, lakes, rivers, and wild life, and to have compassion for living creatures."

[11] The wordings of Article 48-A were subject to much debate in the Indian Parliament. One Amendment that was proposed, required the state to 'conserve and develop water, soil and other natural resources' to be included in Article 48-A. Another demand was that this Article should also ensure that any effort by the State to protect and improve the environment would not harm the tribal forest dwellers. In the *Rajya Sabha* also there were similar demands. Some of members of the *Rajya Sabha* wanted Article 48-A to specifically include 'Mineral wealth' and a specific requirement on the Government to 'undertake adequate and effective measures to check environmental pollution'.

[12] The Directive Principles of State Policy (also known as DPSP) are given in Part IV of the Indian Constitution. The DPSP are those principles that could not be guaranteed by the State because of many reasons including economical reasons. However, they are intended to be achieved by the State in the later years when the States economic power improves. Though the DPSP are not directly enforceable in the Court of law, the judiciary enforces them indirectly, by using them as tools of interpretation for the Fundamental Rights under part III of the Indian Constitution.

[13] Article 21 says; "No person shall be deprived of his life or personal liberty except according to the procedure established by Law."

[14] Constititution of India, Article 248.

[15] The Constitution of India, Article 253 reads thus: "Notwithstanding anything in the foregoing provisions of this Chapter, Parliament has Power to make any law for the whole or any part of the territory of India for implementing any treaty, agreement or Convention with any other country or countries or any decision made at the International Conference."

[16] Entry 13 of the List I includes to the prerogative of the Union Government to "participation in International Conferences, Associations and Other Bodies and implementing of Decisions made thereat."

[17] It is commonly referred to as the *Shrimp Culture* case.

[18] Nuisance may be divided into two types *viz*., Public Nuisance and Private Nuisance. While private nuisance is interference with use of land; public nuisance means an interference with a right common to the general public. Though both these types are important for environmental management, the law of public nuisance has a predominant connection with the environmental law.

[19] Code of Civil Procedure, Section 9. This section empowers the court to try all suits of a civil nature and reads thus: "The Court shall…have jurisdiction to try all suits of a civil nature excepting suits of which their cognisance is either expressly or impliedly barred."

[20] The Indian Penal Code, 1860. Section 269 IPC says that "whoever unlawfully or negligently does any act which is, and which he knows or has reason to believe to be, likely to spread the infection of any disease dangerous to life, shall be punished with imprisonment of either description for a term which may extend to six month, or with fine, or with both."

[21] Code of Criminal Procedure, 1973, Section 133 says that "(1) whenever a District Magistrate or a Sub-Divisional Magistrate or any other Executive Magistrate specially empowered in this behalf by the State Government on receiving the report of a police officer or other information and on taking such evidence (if any) as he thinks fit, considers — (a) that any unlawful obstruction or nuisance should be removed from any public place or from any way, river or channel, which is or may be lawfully used by the public; or (b) that the conduct of any trade or occupation or the keeping of any goods or merchandise; is injurious to the health or physical comfort of the community, and that in consequence such trade or occupation should be prohibited or regulated or such, goods or merchandise should be removed or the keeping thereof regulated; or (c) that the construction of any building, or the disposal of any substance, as is likely to occasion conflagration or explosion, should be prevented or stopped; or (d) that any building, tent or structure, or any tree is in such a condition that it is likely to fall and thereby cause injury to persons living or carrying on business in the neighborhood or passing by, and that in consequence the removal, repair or support of such building, tent or structure, or the removal or support of such tree, is necessary; or (e) that any tank, well or excavation adjacent to any such way or public place should be fenced in such manner as to prevent danger arising to the public; or (f) that any dangerous animal should be destroyed, confined or otherwise disposed of, Such magistrate may make a conditional order requiring the person causing such obstruction or nuisance, or carrying on such trade or occupation, or keeping any such goods or merchandise, or owning, possessing or controlling such building, tent, structure, substance, tank, well or excavation, or owning or possessing such animal or tree, within time to be fixed in the order-(i) to remove such obstruction or nuisance; or (ii) to desist from carrying on, or to remove or regulate in such manner as may be directed, such trade or occupation, or to remove such goods or merchandise, or to regulate the keeping thereof in such manner as may be directed; or (iii) to prevent or stop the construction of such building, or to alter the disposal of such substance; or (iv) to remove, repair or support such building, tent or structure, or to remove or support such trees; or (v) to fence such tank, well or excavation; or (vi) to destroy, confine or dispose of such dangerous animal in the manner provided in the said order; or, if he objects so to do, to appear before himself or some other Executive Magistrate Subordinate to him at a time and place to be fixed by the order, and show cause, in the manner hereinafter provided, why the order should not be made absolute. (2) No order duly made by a Magistrate under this section shall be called in question in any civil court. An *Explanation* to the section reads thus: "public place" includes also property belonging to the state, camping grounds and grounds left unoccupied for sanitary or recreative purposes."

[22] The first Indian Forest Act was enacted in the year 1865 through which the state declared that the forests belong to the state and state can commercially exploit it to any extent. Later on the Forest Act, 1878 was enacted. The Forest Act, 1927 repealed both these laws.

[23] The Constitution of India. Article 252 (1) says thus: "If it appears to the Legislatures of two or more States to be desirable that any of the matters with respect to which Parliament has no power to make laws for the States except as provided in Articles 249 and 250 should be regulated in such States by Parliament by law, and if resolutions to that effect are passed by all the House of the Legislatures of those States, it shall be lawful for Parliament to pass an Act for regulating that matter accordingly, and

any Act so passed shall apply to such States and to any other State by which it is adopted afterwards by resolution passed in that behalf by the House or, where there are two Houses, by each of the Houses of the Legislature of that State'

[24] Though the control of pollution encompasses many issues this paper only covers the Water Act and the Air Act within in its ambit.

[4] Section 2(e) of Water Act says thus, "Pollution means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms."

[26] The Environment Impact Assessment Regulation, 2006, [hereianfter EIAR] makes mandatory for the proponent of the project, under paragraph 6 read with appendix II, to point out categorically about the threat to biodiversity and energy conservation.

[27] EIAR Rule 2 (d) reads thus: Consumption with respect to any ozone depleting substance means the amount of that substance produced in India in addition to that amount imported, less the amount exported; Rule 2 (f) reads thus: calculated level of consumption shall be determined by adding together calculated levels of production and imports and subtracting calculated level of exports.

[28] EIAR Rule 3(1) reads thus: "No person shall produce or cause to produce any ozone depleting substance after the date specified in column (5) of schedule 5, unless he is registered with the authority specified in column (4) of that schedule.

[29] EIAR Rule 2(i) reads thus: 'Ozone depleting substance means the ozone depleting substances specified in column (2) of schedule I, whether existing by itself or in a mixture, excluding any such substance or mixture (blend) which is manufactured product other than a container used for the transportation or storage of such substance.

[30] EIAR Rule 10(1) reads thus: "No person shall import or cause to import any product specified in column (2) of schedule VII which are made with or contain ozone depleting substances specified in column (3) after the date specified in column (4) of that Schedule unless he obtains a licence issued by that authority.

[31] EIAR Rule 12 (1) reads thus: "No person shall manufacture, import or export compressors after the date specified in column (5) of Schedule V unless he is registered with the authority specified in column (4) of that Schedule.

[32] In this case, the Supreme Court ordered that the tribals who are displaced for the developmental activities shall be provided with lands of quality at least equal to that of lands previously occupied by them, suitable to provide for their present needs and future development. Even after ten years of the decision, over 200,000 *Narmada Dam Oustees* are still to be rehabilitated. It has become a crime that goes unpunished for the last 25 Years.

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Environmental Governance and Climate Change: Need for Global Partnership

Girish Kumar R*

Abstract

Despite the major differences over equality and inequality among the nations vis-à-vis commitments, a common understanding to contain climate change among the international community is emerging. The UN's Intergovernmental Panel on Climate Change (IPCC) set 2° Celsius (or 3.6° Fahrenheit) as the goal seems more or less accepted by all. One such positive step was the declaration of 2014 as the International Year of Small Island Developing States (SIDS) by UN to highlight the issues of Small Island developing states.Amidst the ideological slugfests among dominant theories in International Relations on different global issues, there exists a space, where all the theoretical constructs, converge – that is, Global Partnerships in Environment.This article asserts on the necessity of building Global partnership on Climate Change, because the entire anarchic system of sovereign states is itself sheltered within the wider structure of the Earth's biosphere.

Keywords: UNFCCC, Climate Change, Environmental Governance, Kyoto Protocol

1. INTRODUCTION

A rise in sea level could see the extinction of the republics of Kiribati, Maldives, the Marshall Islands and Tuvalu, barely one metre above sea level from the world. So are their inhabitants–the Chuuk flying fox, the Black-spotted Cuscus, the monkey-faced bat, the iguana, the Mariana skink, Poncelet's giant rat – the rare species that happily co-exist with man. The grand children of some of the islands, predominantly small and low-lying, most being volcanic or reefs, are unlikely to see their nations, their history, their culture making the entire islands a history, though their grand parents produce comparatively minuscule amounts of carbon.The year 2014 is declared by the U.N. General Assembly as the 'International Year of Small Island Developing States'to highlight their complex and unique developmental challenges vis-à-vis environment. The Year underlines

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the need for global environmental governance and coherent policies to save these nations that are vulnerable to the effects of climate change.Global environmental governance necessitates cooperation on environmental policy among governments, UN agencies, other intergovernmental bodies, and stakeholders. UN acknowledged that the "global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response" (UNFCCC 1992). It includes harmonization of domestic laws with international laws and standards and with the goals, targets and commitments identified, particularly in the UN's Programme (UNEP 2009). An examination of global partnerships in reaching international agreements or the creation of lexspecialis regimes indicates that most of them are signed under the auspices of UN, and it is the splendor of these dense set of norms and values that UN aspires to see in the world, constitutes the very warp and woof of majority of the global partnerships. Such partnerships for governance of global commons, to become effective and meaningful, should be at multi-level - global, regional, national or even local level and extend to all the categories of nations- developing, developed and the least developed. This article addresses the inevitable necessity of Global Partnerships in global environment, and the likely convergence of divergent theoretical frames that logically weave these partnerships. Even though, Hardin through his perception of the 'tragedy of commons' as early as 1968 discussed environmental issues within the background of politics and economics, the global environmental politics, compared to other fundamental issues like war and peace and the world economic order, as a systemic knowledge is a new phenomenon within International Relations.

2. IR THEORY OF GLOBAL PARTNERSHIP

The major theoretical terrain of international relations is rife with the ideological scuffles between two dominant theoretical constructs – Realism and Liberalism. Realists perceive the existence of perpetual anarchy in the world, which is a jungle where nation states roar and roam like lions. Owing its legacy to political thinkers like Machiavelli, Hobbes and Morgenthau, realism always scoff at the noble virtues of the humanity. The theoretical edifice they erected is premised upon the state of nature where the life of man is "solitary, poor, nasty, brutish and short". International relations is a zero sum game, where one can win only at the expense of another. In such a nasty world, conceiving nation states forging 'global partnership' for peace and development seems a distant possibility. Powerful states act in coercive manners to achieve their interests.But weaker states have to acknowledge their subservience, as 'all politics is struggle for power' (Schuman 1941). As suggested in the hegemonic stability theory (Kindleberger 1973), the US may be averse to any sort of international institution taking shape without its leadership for it is the

responsibility of the hegemon to provide stability in the global order. At the other side, stands the theoretical strand of liberalism, which reposes its faith in the noble values of human kind living in a world, where life is a beauty, felicific and fecund experience providing a fertile ground to forge friendly bonds among nation states, through global partnerships.Liberalism holds that, "as long as your state is better off as a result of cooperating with others, the gains of others should not matter" (Bova 2010). Liberalism is premised upon the Lockean state of nature, where all men are free and happy "to order their actions, and dispose of their possessions and persons, as they think fit, within the bounds of the law of nature…The state of Nature has a law of Nature to govern it", and that law is reason, which teaches us that "no one ought to harm another in his life, liberty, and or property". Marxist theory is based upon class war, where exploitation of the have-nots by the haves, makes the world a hotbed of tension between the South and the North. They reject both realism and liberalism and focuses on economic and material aspect more. Constructivism, the recent entrant to the IR theory, emphasizes on "ideas of norms, the development of structures, the relationship between actors and said structures". It evaluates "how identity influences actions and behavior amongst and between actors". Further, it examines how norms themselves shape an actor's character (Reus-Smith 2005). The states identify the nature of structure based on "socially-defined and intersubjective meanings than reacting to a predetermined structure" as suggested by neorealists and neoliberals Wendt (1992). Amidst these ideological clashes among dominant theories in International Relations on different global issues, there exists a space, where all the theoretical constructs converge – that is, Global Partnerships in Environment because there exists a growing volume of "privately produced global public bads, such as pollution" in environment field (Barrett 1999). This article asserts on the necessity of building Global partnership on Climate Change, because the entire anarchic system of sovereign states is itself sheltered within the wider structure of the Earth's biosphere.

3. GLOBAL PARTNERSHIP IN CLIMATE CHANGE

Be it the environmental studies like those of Erlich or the Security studies that abstracted environmental degradation as a security threat, like that of Westing (1980) or Barnett (2003), social scientists converge on identifying climate change as an anthropogenic global challenge, and treat environment as 'global commons' problem that necessitates building global partnerships to reach agreements on climate change (Haas, Keohane & Levy, Ruggie). The world converged many times to reach agreement on environmental governance (See the following table).

Table 1: Global Environmental Governance - Major Agreements since 1970

Year	Treaty
1972	Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention).
1973	Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).
1973	International Convention for the Prevention of Pollution from Ships (MARPOL).
1976	Convention for the Protection of the Mediterranean Sea Against Pollution.
1979	Convention on the Conservation of Migratory Species of Wild Animals.
1980	Convention on the Conservation of Antarctic Marine Species of Living Resources.
1985	Vienna Convention for Protection of the Ozone Layer.
1987	Montreal Protocol on Substances that Deplete the Ozone layer.
1989	Basel Convention on the Control of Transboundary Movements of Hazards Wastes and Their Disposal.
1992	UN Frame work Convention on Climate Change (UNFCCC).
1992	Convention on Biological Diversity (CBD).
1994	United Nations Convention to Combat Desertification (UNCCD).
1997	Kyoto Protocol to the UN Framework Convention on Climate Change.
1998	Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazards Chemicals and Pesticides in International Trade.
2000	Cartagena Protocol on Biosafety to the Convention on Biological Diversity.
2001	Stockholm Convention on Persistent Organic Pollutants.
2001	International Treaty on Plant Genetic Resources for Food and Agriculture.
2010	Nagoya Protocol on Access to Genetic Resources and their Fair and Equitable Sharing of Benefits Arising From Their Utilization to the Convention on Biological Diversity.
2013	Minamata Convention on Mercury.

Global Partnership and effective involvement of different nation states are extremely vital in issues related to Climate Change as global environment is a Global Public Good, where agreement need to be reached at the global level and its implementation need to be made at the bottom level, i.e., by the nation state or even the village panchayath. However, Realism perceives international institutions as threat to the sovereignty of state. In climate change discussion, major international regime included the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. The UNFCCC is a treaty created to confront climate change and is being implemented by many sovereign nations endeavoring to cooperate. It endeavours to promote

cooperation among nations by creating another institutional apparatus, namely the Conference of the Parties (COP). It is out of this international process that the Kyoto Protocol was created.It was an attempt to legally ensure international participation and cooperation to check greenhouse gas emissions. Despite the ongoing debate about its 'success'the protocol set a potential base line for future legally mandated international partnership.

It took almost a decade of global efforts to put the Protocol to the United Nations Framework Convention on Climate Change into fruition, which was adopted in 1997 but entered into force in 2005. This global partnership saw the commitment of 154 states to limit the emission of 'greenhouse gases', which could contain the Potential costs of anthropogenic interventions harmful to environment that range from 'sea-level rise and frequent extreme weather events like droughts and floods to the spread of diseases and famines'. It was also a case of US-EU conflict on a serious global issue. "The first transatlantic disagreement concerned the EU's proposal to commit parties to a mandatory list of 'policies and measures', which the US categorically opposed. Second, in terms of targets, the EU demanded a reduction of greenhouse gas emissions equalling 15 per cent of 1990 levels by 2010, whereas the US proposed a mere stabilization at 1990 levels. Third, the US sought to introduce greater flexibility into the definition of targets and ways of fulfilling them. Related proposals included a 2008–12 'target period' instead of a single target year, 'banking' emission allowances and 'borrowing' from future periods, and the crediting of 'carbon sinks', that is, of human activities such as afforestation which increase the natural ability of land to absorb CO_2. In addition, the US proposed 'flexible mechanisms' which would allow countries to trade emission allowances with other states and to gain emission reduction 'credits' with projects in foreign countries, thus lowering the cost of abatement. The EU initially opposed all these ideas". To win US, the EU accommodated US demands for softer emission reduction targets and flexibility provisions in the initial phase of negotiations. But the new Bush administration rejected the agreement. "While accommodating the US in the original negotiations came at a high environmental cost, it would have been more detrimental to lose the largest emitter of greenhouse gases. After the US withdrawal, however, non-hegemonic cooperation was more beneficial than the alternative of abandoning the protocol, particularly because European negotiators hoped for an eventual US return to the Kyoto framework. The perception that the US withdrawal violated norms of equity and appropriate diplomatic conduct additionally hardened the European resolve to rescue Kyoto, despite business concerns about potential competitive disadvantages" (Fehl 2011).

The EU and the US are the two major actors whose early expressions of interest and commitment helped shape the framework of the debate as well as the willingness of other key player like

Australia and Japan, China, India, and Brazil to come to the table. Europe's contribution is particularly significant. EU's aggressiveness brought Russia and Australia, and made ratification of the Kyoto Protocol possible. To win the backing of Russia, EU used Russia's membership application at WTO as a trump card. In fact, the EU set a model by adopting a'comprehensive supranational climate policy regime' and pressed for "increasingly progressive GHG emissions reduction goals both regionally and internationally, the starting point for post-2012 climate negotiations would be a decade behind". Though the US failed to lead international negotiations, its presence at international level was strongly felt. However, its approach until 2009 was cautious often warning about the "scientific uncertainties and the negative economic consequences associated with aggressive abatement actions". Thus, "while the EU has been widely heralded as an international climate leader and the US as an international climate laggard, the US, in fact, played a more dominant role in constructing the existing international legal regime" (Carlarne 2010).

In 2009, US President Barrack Obama declared:

> "We must be honest with ourselves. In recent years, we've allowed our alliance to drift … In America, there's a failure to appreciate Europe's leading role in the world…. Together we must confront climate change by ending the world's dependency on fossil fuels by tapping the power from the sources of energy like the wind and the sun and calling upon all nations to do their part. And I pledge to you that in this global effort the U.S. is now ready to lead" (Obama quoted in Carlarne 2010).

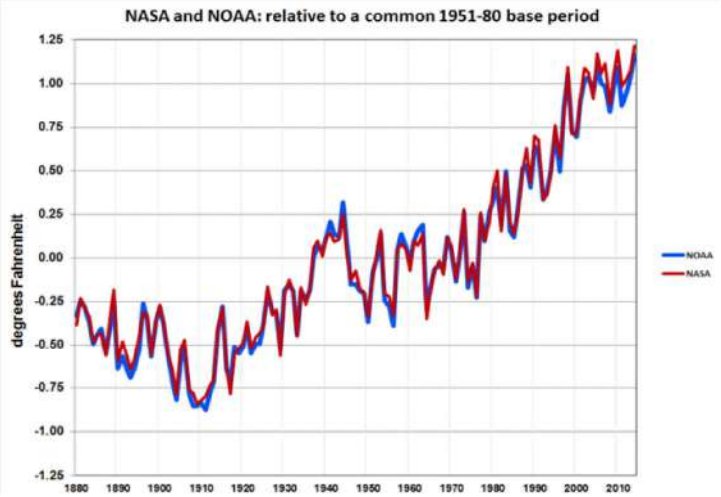
But policies or activities within "one country and generation cause deleterious consequences for those of other nations and later generations, they can constitute serious injustices. Hence, anthropogenic climate change poses not only a global environmental threat, but also one to international and intergenerational justice. The avoidance of such injustice has been recognized as a primary objective of global climate policy…" (Vanderheiden 2014). To ensure the participation of developing nations, the United Nations Framework of Convention on Climate Change (UNFCC) developed the principle - 'Common but Differentiated Responsibilities' (CBDR) - to break the deadlock between the developed and developing nations. It was ratified in the UNFCCC in Rio de Janeiro, 1992. As early as in 1896 a Swedish chemist, Svante Arrhenius, calculated that increase in atmospheric concentration of carbon dioxide (CO_2) would cause an increase in global mean temperature by about 5 degrees Celsius. The prediction of atmospheric scientists that in the mid 1970s that that CFC emissions cause a 7% depletion of the ozone layer is a reality and could escalate skin cancers and cataracts and decrease agricultural and fishery productivity induced several nations to opt unilaterally limit the production and use of CFCs. Global CFC consumption

stabilized through the early 1980s. But the real momentum was created by the Intergovernmental Panel on Climate Change (IPCC) report in 1990, which warned the world of dire consequences. At the Rio 'Earth Summit' the global community could produce a Framework Convention on Climate Change. The subsequent Berlin convention in 1995 meeting of the Conference of Parties to the Framework Convention on Climate Change arrived at a target for reduced emissions in industrial countries without similar obligations for developing countries (Barrett 1999). The treaty mechanisms that diplomats can choose, when subject to the constraint of self enforcement, depend in turn on the economics of the problem. The Preamble acknowledged that 'change in the Earth's climate and its adverse effects are a common concern of humankind' due to substantial increase in the atmospheric concentrations of greenhouse gases, affecting adversely the natural ecosystems and humankind. It further noted that the largest share of global emissions of greenhouse gases originated in developed countries (UNFCCC 1992). The fundamental principle of CBDR is outlined in Article 3.1, which reads:

> 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.

But the dispute over the concept of CBDR continues. Developing countries complain that the rich countries have not shouldered a fair share of the burden. They want the developed nations to cut emissions. Rich nations should lead by example, green technology should be transferred and financial support should be provided lead to the developing world. In consequent to these demands a consensus was reached in Cancun, where the rich countries would enhance extra funds from about US $10 to US $100 billion a year by 2020 to support developing countries. Coherence among climate policies among developed nations is yet to be reached. Despite these variances among the actors, the developing nations, or the European states or the US, or the theoretical differences among the scholars, they all share a common understanding – global environ as a global common.

Graph 1: 2014- The Hottest year ever recorded.



Source: https://www.vox.com/2015/1/16/7556423/2014-hottest-year

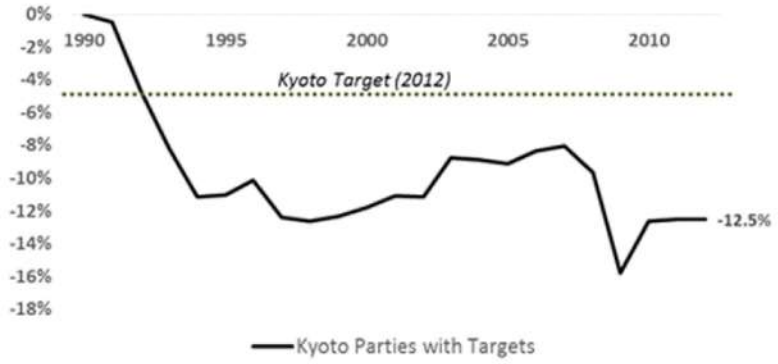
This graph depicts the change in global surface temperature relative to 1951-1980 average temperatures. It may be noted that of the sixteen of seventeen warmest years in the 136-year record have occurred since 2001. The sole exception was 1998. 2014 was the hottest year ever recorded. (Source: NASA/ National Oceanic and Atmospheric Administration, 2014). In 2014 the global average temperature is roughly 1.24°F (or 0.69°C). This is warmer than the average during the twentieth century. The hottest years so far recorded were 2010, followed by 2005 and 1998. It may be noted that all 10 hottest years have occurred since 1998.

On 11 December 1997 the Protocol was adopted in Kyoto, Japan. It entered into force on 16 February 2005. The protocol is an international agreement that sets targets for industrialized countries to reduce their greenhouse gas emissions.It is linked to the United Nations Framework Convention on Climate Change, which commits the signatories Parties to set "internationally binding emission reduction targets" (UNFCC). The detailed rules for the implementation of the Protocol were adopted at COP7 in Marrakesh, Morocco, in 2001.These are called as the 'Marrakesh Accords.' It attributes the principal responsibility of the present-day high levels of GHG emissions in the atmosphere to developed countries, whose more than 150 years of industrial activity created global environmental catastrophe (1). The Protocol further develops the principle of "common but differentiated responsibilities" putting relatively heavier burden on developed nations. Major participants like Russia, Japan and the United Kingdom have ratified this protocol in the Climate

Change negotiations; but it was also conspicuous by the absence of the United States from among the signatories, much in line with its realist perception about the world. The US pulled out of the Kyoto Protocol in 2001. It cited the absence of an agreement signed by developing countries to cut their greenhouse gas emissions as the reason.

The Kyoto Protocol was opened for signature in 1998. The Kyoto Protocol could come into force only when countries responsible for 55 per cent of developed nations' 1990 carbon dioxide emissions ratify the agreement. Prior to Russia joining the treaty this only 44 percent ratified the treaty placing the Protocol's future in the limbo. Russia and the United States representing 17 and 36 percent of that amount respectively were hesitant to join (Chandler and Popov 2003). But Russia ratified in 2005 ceasing a tedious political process that remained uncertain for about 7 years. This was a major breakthrough in the history of the global environmental governance. The effect of the agreement is presented below.

Graph 2: Kyoto Protocol Carbon Emissions, 1990-2012



The chart shows the achievement after Kyoto Protocol. The downward slide since the 1990s indicates the world' commitment to cut emissions even before the Protocol came into existence. Members limited emissions to nearly 10% by 1997 -a year before the Kyoto Protocol was open for signatures- much ahead of the Kyoto Protocol target of 4.7% CO_2 reduction by 2012, showing tremendous momentum among the nation states to swaddle their differences to protect the earth.Following table shows reduction commitments of different nations.

Table: 2 Reduction Commitments of the Kyoto Protocol

Party	*Reduction commitments*	*Emissions 1990 in Mt*	*Emissions 2000 in Mt*	*Emissions 2008 in Mt*	*Change 1990-2008*
Australia	+8 %	418	496	550	+31.4%
Belarus	0 %	140	79	91	-35.1 %
Bulgaria, Czech Republic, Estonia, Latvia, Lithunia, Romania, Slovakia, Slovenia	-8 %	814	469	487	-40.2 %
Canada	-6 %	592	717	734	+24.1 %
Croatia	-5 %	31	26	31	-0.9 %
EU	-8 %	4 245	4 114	3 970	-6.5 %
Iceland	+10 %	3	4	5	+42.9 %
Japan	-6 %	1 269	1 344	1 282	+1.0 %
Liechtenstein, Monaco, Switzerland	-8 %	53	52	54	+0.5 %
New Zealand	0 %	61	70	75	+22.8 %
Norway	+1 %	50	53	54	+8.0 %
Poland, Hungary	-6 %	679	467	469	-30.9 %
Russian Federation	0 %	3 322	2 025	2 230	-32.9 %
Ukraine	0 %	928	393	428	-53.9 %
USA	-7 %	6 112	7 008	6 925	+13.3 %
Total		**18 717**	**17 318**	**17 383**	**-7.1 %**

Source: UNFCC available at www.unfcc.int

However, developing nations remained outside these regimes, though the global momentum induced them to reduce their GHG emissions. Initially, the developing countries were acting in their national interest (Frankel 1999). The emissions in developing countries related to production, which were much needed to ensure economic growth and were intended to provide their population with basic amenities and needs. Given the resource constraint many developing countries face, poverty alleviation and growth rather than environment protection predominated their policy narrative. Any other policy option went against their national interests (CFR, 2013). The richest 20 percent of the world's population dwelling in the developed world is responsible for up to 80 percent of historical emissions (Parks and Roberts 2008). This makes the contest the between development and environment inevitable, a dominant narrative in the developing nations, which are more obsessed with development to ensure basic amenities to their citizens.

Realist School underscores these reasons for not committing to agreements reducing GHG emissions. Accordingly, when we looked through realist perspective, climate change negotiations seem to be motivated by power politics and national interests. Both international and domestic political actors, and conditions play critical roles in the post-commitment phase of global co-operation. Drawing on original research, interviews, and discursive analyses of government

documents in Europe, Australia, and North America, Lantis (2008) concludes that norms and executive strategies play an important role in shaping ratification outcomes. This is very significant in climate change treaties. For instance, Boykoff and Boykoff(2005) identifies media coverage of climate change in the US as a major factor that forces the US leaders to remain skeptical and belligerent on global environmental negotiations.

Nevertheless, the necessity of mitigating the effects of climate change is making a metamorphosis in the negotiating positions of nation-states. It revealed that there is more convergence than disagreement in the remit of climate change governance. The pullout of United States from the Kyoto Protocol, "galvanize[d] the European Union and the G77+China into further ratification" (Buckley and Newell 2010). As most powerful nation and as the largest contributor of greenhouse gases the US pull out would have rendered the Protocol insignificant. But Russian ratification in 2005 was a major respite and made the Kyoto Protocol to remain relevant. Among the thirty-six nations that pledged to reduce emissions, only three failed to cut or manage their green house gases emissions. Among these thirty-three nations that did, only three could not pass the baseline amount for reduction (Kyoto UNFCCC) – a fact that demolishes the contention of realist school, which would prophesise that without the US, others would not be motivated to ratify the Protocol. Frequently, the developed nations accuse the developing nations as a challenge at the international negotiations and their reluctance to accept more of a role in addressing global environmental issues. "Kyoto is based upon carbon production, not consumption, which conveniently places the burden of greenhouse gas emissions reduction on those countries that produce energy-intensive goods, rather than those that consume them" (Helm and Hepburn 2009). In fact, developing nations were earlier seen as a progressively more Hobbesian regional system.But crises that enveloped the earth due to climate-driven scarcity pressures forced the developing nations to move towards global partnership. The overwhelming evidence suggests that the anthropogenic climate change is changing the natural world and remapping the contours of international politics. The discipline of International Relations needs to address this ontological problem and prescribe apposite recommendations for policy-makers (Habib 2011). Despite the major differences over (in)equality among the nations vis-à-vis commitments, a common understanding constitutes a prerequisite. One such positive step was the declaration of International Year of Small Island Developing States (SIDS) by UN to highlight the issues of Small Island developing states.

2014 – International Year of Small Island Developing States

The purpose of the "International Year of Small Island Developing States" was to focus the attention of the international community on the challenges, as well as the many achievements, of Small Island Developing States. It was announced by the U.N. General Assembly with the goals

of raising awareness of the Small Island Developing States' (SIDS) complex and unique developmental challenges visa-a-vis environmental problems that include climate change, and to find viable solutions to them. In today's Pacific Islands, "the ocean is commonly an enemy, an aggressor threatening to attack the land, a false friend delinquent in providing the same degree of sustenance it provided in the past to the increasing numbers of people living along its borders" (Nunn 2007).

> "As a ten-year-old, I used to look at the sea with awe, at the seemingly endless supply of fish that I could harvest ... now when I look at it, I wonder how far into the new millennium we will be before it overwhelms our coasts. What is there to celebrate about a new millennium if the northern group of the Cook Islands, or the many islands of Kiribati, Tokelau, Tuvalu, the Federated States of Micronesia and the Marshall Islands are about to disappear beneath the ocean?" (Tamari'I Tutangata, the Director of Secretariat of the Pacific Regional Environment Programme quoted in Nunn: 2007)

For instance, Tuvalu, which has always had to fight with extreme weather events like storm surges and floods, saw an increase in their intensity, frequency and magnitude, due to climate change and sea level rise. Even a very minor rise in the sea level would have disastrous effects on atolls and low islands (IPCC 2001). The President of the island nation of Palau, Johnson Toribiong was prompted to call on the UN General Assembly to request an advisory opinion from the International Court of Justice (ICJ). He was addressing state responsibility for the disastrous consequences of anthropogenic climate change. He said that voluntary actions by individual states are not enough to "stem the rising tides or the flood of global emissions" and that an advisory opinion from the ICJ is an appropriate recourse that "will give us the guidance we need on what all states must do." In the process, Palau also hopes "to raise the consciousness of the world community to the issue of responsibility"[(2)].

The people of Tuvalu are not to blame for climate change, yet they experience its most severe impacts. Regardless of the disbelief about the anticipated disappearance of the island, the islanders are in desperate need for support from their own government and the international community. The environmental stability and, the human rights of Tuvalu's population are in jeopardy. The designation of 2014 as the International Year was a historic opportunity for marshaling global action and partnership in support of SIDS. It promoted global awareness of SIDS challenges, but the challenges still continue. These include sea level rise and natural disasters, susceptibility to external shocks and disproportionate dependence on global trade.Their limited capacity, depletion

in marine resources and coastal erosion complicate the problems further. The UN again stressed the need for global partnership.

4. CONCLUSION

For the last 12,000 years, global climate fluctuated within a narrow band. Global efforts should be to contain global average temperatures from rising more than 2° Celsius (or 3.6° Fahrenheit) above. The UN's Intergovernmental Panel on Climate Change (IPCC) set 2° Celsius (or 3.6° Fahrenheit) as the goal for climate change. But low-lying, small-island states call for more - 1.5°C to save their nations from extinction. It needs sacrifice from all to stop endangering nature and the very human existence on this planet. Quenching the insatiable greed for material gain through legally binding international commitments and their stringent implementation seems the sole viable option.To quote Mahatma Gandhi – "Nature has enough for our need but not for our greed." But to achieve this target, co-operation among all is needed.

End Notes

1. Governments met in Marrakesh, Morocco, from 29th October to 9th November, 2001, for the 7th Conference of the Parties to the UN Framework Convention on Climate Change (COP7). The purpose was to agree legal text that would cover technical aspects of the political agreement on how to implement the Kyoto Protocol

2. The President of Palau, Johnson Toribiong, said that that actions by individual countries are not enough to combat the effects of climate change and an advisory opinion from the International Court of Justice (ICJ) would "give us the guidance we need on what all states must do."See UNTV for the President's address available at http://www.unmultimedia.org/tv/unifeed/asset/U120/U120203b/

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Postmodern Turn in International Relations: Contributions of Mahatma Gandhi

Roshan Varghese V*

Abstract

The academic discipline of International Relations [IR] has been undergoing tremendous changes ever since it became an independent field of study in the first half of the last century. During this period, IR transformed from an academic discipline focused on studying the management of international borders to a subject dedicated to studying global issues and its impact on the planet. It is widely accepted that the postmodern turn in IR since the 1980s has opened up the scope of the discipline. The aim of this article is to examine the contributions of Mahatma Gandhi in transforming the focus of IR.

Keywords: Gandhism, International Relations Theory, Postmodernism, Constructivism

1. INTRODUCTION

Mahatma Gandhi had not been considered as an ideologue in the discipline of International Relations [IR] for a long time. The major reason for the disregard for Gandhi was the mismatch between his focus of thought and the thrust area of the discipline till the 1980s.Till that period IR was treated as a discipline focused on the management of international borders. More precisely, IR scholars made a difference between 'high politics' and 'low politics' High politics was related to issues pertaining to the security of the state outside the national borders (ibid). Therefore, 'high politics' was focused exclusively on the framing of defense and foreign policies for the security of

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state. At the same time, all the issues pertaining to local and national importance were treated as the concern of 'low politics' (Brown and Ainley 2009). It was considered as the responsibility of Governments at the national and local levels as well as non-state actors to resolve these issues through appropriate measures. However, there is no sovereign government at the international level, therefore, issues beyond the borders or issues related to 'high politics' were ought to be addressed with a different set of rules. Not only that, the overwhelming majority of the IR thinkers considered nation-state as the one and only actor in international politics that left no room for non-state entities at the international level.

Interestingly, the concerns expressed by Gandhi during his time were seemed to be the issues falling under the concern of 'low politics'. For instance, Gandhi was vocal against the over-exploitation of natural resources as it would lead to resource depletion and environmental degradation (Singh 1999). Before the 1980s, environmental issues were considered as part of 'low politics' as the respective governments could address these issues through various programmes and policies. Not only that during those days correlations among exploitation of natural resources, resource depletion, environmental degradation, economic disparities, ethnic conflicts, civil wars etc., were not taken into consideration. It was the stark distinction between 'high politics' and 'low politics' and different approach to each of them virtually neglected the significance of Gandhi in the field of IR.

However, all these changed with the blurring of the distinction between 'high politics' and 'low politics' as the academic as well as the policy circles converged on the point that environmental problems have already become an issue of global concern. They also agree that these issues cannot single-handedly addressed by respective nation-states. Rather, it requires a synergized initiative of governments and non-state actors. The new developments also challenged major standpoints of modern theories of IR, and it led to the emergence of post-modern approach to the discipline.

The postmodern approach to IR has emerged as a response to modern theories of IR. Major postmodern theories in IR are constructivism, critical theory, green political theory, feminism, etc. It should be noted that many of these theories agree with the viewpoints expressed by Gandhi at the dawn of the last century. It is not an exaggerated statement that Gandhi heralded postmodern era even though it got wide acceptance at the dusk of the last century. Therefore, it is pertinent to examine the contributions of Mahatma Gandhi to the postmodern approach to the academic discipline of IR.

2. GANDHI'S APPROACH TO KNOWLEDGE

Modern theories of IR were trying to make the discipline objective, universal and scientific. The claims of objectivity and universal application espouse the idea that the scientific truth is absolute. However, being the strong adherent of Jain philosophy of *anekantavada* Gandhi held that the truth has many facets and human beings can grab a fragmented part of it. According to Gandhi, it is impossible to realise the absolute truth in one's lifetime. In his own words, "... a scientist who thought he conducts his experiments with the utmost accuracy, forethought and minuteness, never claims any finality about his conclusions but keeps as open mind regarding them". Later, Theory of Falsification set forth by Karl Popper also supported Gandhi's notion that absolute truth is not uncovered by any amount of scientific inquiry. Rather, science is only getting closer to absolute truth by advancing the existing knowledge (Rudolph and Rudolph 2011).

Modern theories are claimed to be meta-theories, it is universally applicable, independent of time and space. For instance, Kenneth Waltz's neo-realism is a meta-theory, claiming to have the potential to predict the developments in international politics. But the postmodern approach of Gandhi rejects the meta-narratives. Postmodernism of Michel Foucault also endorses the fact that a research takes each case separately and focused on the genealogical history of the present of the each case. Gandhian hermeneutic was also postmodern. According to modernist hermeneutics, a text itself is self-evident and also has a meaning independent of time and space. For Gandhi, the meaning of a text is contextual and situational (Rudolph and Rudolph 2011).

Postmodernism of Gandhi challenged modernism's approach to knowledge. For instance, Francis Bacon, one of the proponents of modernism, treated knowledge as a means to enhance power. According to Bacon, knowledge is worthy only if it has some practical purposes. The major concern of Francis Bacon was to enhance the imperial power of Britain. It should be noted that Bacon was a proponent of mercantilism, the early form realist theory in IR. He was an ardent supporter of colonialism and also an influential figure in formulating Britain's balance of power policy. On the corollary of that, there was no room for ethical consideration in Bacon's understanding of knowledge. While Bacon set the standard for knowledge on the basis of its practical utility, Jeremy Bentham [1748-1832], another leading thinker in the modern era, set the standard for morality based on its usefulness. Bentham placed an ethical system around the idea of pleasure and pain. For him, the good thing should be the one that brings pleasure directly or is a means to achieve pleasure and a means that avoid pain. Conversely, anything is painful or lead to pain should be the bad thing. Modernism held that technocrats, engineers, and managers could successfully employ scientific knowledge and Enlightenment rationalism; and thereby they can conquer and command nature and materialise an affluent society in the world. In this way modernism

set forth crass materialism for intoxicating its ardent supporters. Mercantilism to utilitarianism, ideologies promoted under the modernism was only to satisfy the temporal aspects of human life at the cost of spirituality and morality. This was one of the major reasons for Gandhi's rejection of modernism.

Modernism has placed reason as the supreme form of vehicle in search of knowledge. Modernism rejected all other means such as theological and traditional methods in discerning knowledge (Pradhan 2008). But postmodernists challenged modernism's standpoint that upholds the supremacy of reason. Postmodernists argued for employing other means too in search of knowledge. Gandhi also shared the same viewpoint of postmodernists and held that Indian alternatives for searching knowledge were not inferior.

Modern theories of IR, especially realism, liberalism and its various strands through 'Grand Debates' were trying to reach a common ontological and epistemological position. The proponents who espoused these theories succeeded in their mission at the 'Third Debate', i.e., between neorealism and neoliberalism [neo-neo debate]. Ontologically, both neorealism and neoliberalism agree with the anarchical nature of international politics. However, neorealists and neoliberalists differ in their strategy to tackle international anarchy. For instance, neorealists argue that uneven distribution of power in terms of resources and military capabilities are the major reason for conflicts among nation-states. The uneven distribution of power is carried out by the structure of the international system, and each nation-state is vulnerable according to the changing equations of power politics. The international politics is controlled by the structure of the international system and the individual nation-states cannot regulate its functioning. In such a condition each nation-state in the international system tries to ensure its security. Here nation-states take decisions in accordance with the signals of the international system.

According to the neorealists, in a state of anarchy self-help mechanism through military build-up is the reliable method to ensure state security. However, neoliberalists argue that economic interdependence is the best bet to mitigate the ill-effects of international anarchy. Even though both the theories differ on preferred measures to address anarchy, they agree with the anarchical nature of international politics. Moreover, both the theories argue that material condition is a catalyst for the developments in international politics. In short ontological position of modern theories of IR is that international politics is determined by the material variables such as military capabilities, economic resources etc. Both the theories rule out the potential of non-material aspects such as ideological preferences, culture, values, and social norms in determining the course of international politics. Both neorealism and neoliberalism argue that focusing on non-material aspects is a reductionist approach to the discipline of IR. They also believe in a clear distinction between 'high politics' and 'low politics' and share a common belief that domestic politics are less important determinants in international politics.

Due to the possibility of the measurable variables, epistemologically both the theories adopted the positivist methods in analysing the developments in international politics. Both of them hold that the structure of the international system functions in a mechanical way. There are regularities in the functioning of the structure of the international system. Through employing the positivist methods, human beings can understand the behaviour and signals of the international system and its implications for nation-states. In this way, both neorealism and neoliberalism became rationalist, and positivist theories. Modern theorists of IR also argue that the capacities of the nation-states can be measured and ranked. For instance, Kenneth Waltz, the chief advocate of neorealism held that nation-states could be ranked on the basis of the score they got on all the following variables: size of the population and territory, resource endowment, economic capability, military strength, political stability and competence.

3. GANDHI AND THE BIRTH OF POSTMODERN THEORIES IN IR

It is pertinent to examine how Gandhian approach differed from the modern theories of IR in terms of their ontological and epistemological standpoints. For instance, according to the tenets of neo-realism asymmetric distribution of resources is the major reason for the enduring rivalry between India and Pakistan. The partition left India with preponderance over Pakistan in terms of the size of territory, population, economy and military capabilities. Pakistan is less than one-third of the size of Indian territory. The population of Pakistan is less than one-tenth of India's, and in terms of economy Pakistan is less than one-sixth that of India. The size of Pakistan's military forces is the half of the Indian military forces. During the time of the partition, the military resources were distributed at the ratio of 2:1 to India and Pakistan respectively (India had one lakh soldiers while Pakistan had only 55000), and this ratio has been remaining unchanged since 1947. The quality of India's defense infrastructure is also far better than that of Pakistan's. According to the tenets of neo-realism, smaller states seek the help of powerful states to ward off the threat from their potential enemies. Pakistan was no exception in this regard. It sought assistance from the United States of America and China (Pasricha 1984). After the defeat of its war against China, India also was dragged into the great power game. This has transformed India-Pakistan conflict into protracted, deep-rooted, and intractable in nature. The experience so far has proved that realist strategies couldn't bring peace in the region.

On the contrary to the materialist understanding of international politics, Gandhi put more importance to the ideational explanation of India-Pakistan rivalry. He knew well that India-Pakistan hostility had its root in ideological difference emanate from communal politics during the colonial period. Therefore, he held that uprooting the seeds of misunderstanding and hatred between the peoples in India and Pakistan was imperative for bringing peace in the region rather than that of

the military build-up along the lines of realist paradigm. For a peaceful world, Gandhi gave first priority to communal harmony, in his constructive programme. Gandhi insisted on the Government of India to hand over Pakistan Rs. 55 crores due as per agreement made by the Partition Council (Phillips 2007). According to him, it was an opportunity to reconcile with the peoples in India and Pakistan. Gandhi even offered a goodwill visit to Pakistan in February 1948, but the plan was subverted by his assassination at the end of that January.

4. GANDHI'S CONTRIBUTION TO THE CONSTRUCTIVISM

Gandhi's notion of international politics as an 'ideational construct' was supported by postmodern IR theorist Alexander Wendt. His theory of constructivism argues that international politics is being constructed through ideas, rules, and norms as well as of shared understandings and practices. According to constructivism, 'material conditions acquire social significance only via intersubjectively shared meanings'. Constructivism rejects the modern theories' understanding of 'perpetual state of international anarchy'. For instance, Alexander Wendt observes: "anarchy is what states make of it". According to constructivism, 'international anarchy' is the creation of practices [of nation-states], rather than the creation of the structure of the international system. Anarchy is there because states 'perceive' anarchy as a reality in international politics and practice accordingly. Constructivism suggests that practices of nation-states and the institutions established by them [or human beings] define the nature of international politics. In other words, the nature of international politics is being shaped by 'interactive, mutually constitutive, and mutually maintaining processes' among nation-states. Constructivism concludes that anarchy and international system are constructed by nation-states or more precisely they are the construction of human beings. Then it is possible to [human beings] either to change it or to reconstruct it.

This standpoint of constructivism challenges the 'top-down' approach of modern theories that the structure of the international system single-handedly regulates the developments in international politics and it is not possible for nation-states to alter it. In addition to Wendt, the postmodern thinkers such as Richard Ashley and R.B.J. Walker also hold that international anarchy is only a 'construct' (Ashley 1988). As far as Ashley and Walker are concerned anarchy is created by nation-states' reluctance to surrender 'sovereignty'. According to Andrew Linklater the concept of international anarchy virtually ignores the possibility of conceiving a community beyond the barriers on the basis of nationality and citizenship (Murray 1997).

Postmodern thinkers including that of Linklater argue that end of the Cold War also marked the demise of the Westphalian global order. According to him, the new system, the post-Westphalian global order gives a clarion call for the emancipation of entire humanity irrespective of national-boundaries (Leysens 2008). The idea of a post-Westphalian global order was the

salient feature of postmodern approach of Mahatma Gandhi to IR. As a corrective measure to the 'top-down' approach of the 'Westphalian global order', Gandhi set forth a reverse approach to IR. He held that grass-root level approach through empowering people can alter the course of international politics. Most of the postmodern thinkers share a similar view of Gandhi therefore, they are focused on the counter-hegemonic movements rather than analyzing the behaviour of international structure and major powers. Gandhi developed Satyagraha as a counter-hegemonic movement to emancipate the oppressed people.

Gandhi was a critic of the modern concepts such as 'nation-state' and 'nationalism'. Gandhi conceptualised India's freedom movement in a non-nationalist perspective. According to Gandhi India cannot be considered as a nation due to the concept itself seems to be incompatible with India's condition. India is not represented on the basis of any particular ethnic group. Gandhi conceived India as a civilisation formed through shared common aspirations and interests of various cultural, linguistic and religious groups (Chakrabarty 2006).

Gandhi, much before the beginning of the postmodern wave, set forth his model of a post-Westphalian global order. His model was like a concentric oceanic circle, in which the individual is placed at the centre. He locates interdependent villages at the second ripple of the concentric oceanic circle. Individuals and villages are the two important elements in the post-Westphalian global order of Gandhi. The village is important for Gandhi because it represents traditional knowledge and value. He held that sustenance of village is vital for preserving true civilisation in its original form. If every individual in a village possesses the aforesaid elements in equal size, then *Gram Swaraj* is attained.

On the contrary to the Westphalian system of governance, Gandhi set forth a decentralised mechanism based on the principle of 'cooperative federalism', in which smaller and larger political units peacefully co-exist. He favoured the equal distribution of economic and political resources among people. Modern theories, especially realism and neo-realism considered 'balance of power' as a natural mechanism in international politics. However, Gandhi advocated for the 'law of nonviolence' for peaceful social relations (Chakrabarty 2006). Gandhian approach to International Relations was 'inclusive' rather than the model set forth by the modern theories. His approach to IR was always guided by his motto of *Vasudhaiva Kutumbakam* [the whole world is my family] (Sankhdher 1999).

Gandhi held that mercantilism, utilitarianism, and capitalism etc. had made human beings subservient to Leviathan-like absolute authorities, such as states, consumerism, unbridled capitalism, and greed. He wanted to emancipate human beings from every form of absolutism. For this end, he introduced the concept of the square of *Swaraj* for ensuring complete independence (Sethi

1996). Like a square, which is formed of its four equal sides, every individual in society should be guaranteed by four important elements such as Political Independence, Economic Independence, Truth and Non-violence. Then only they can be completely independent from all forms of absolutism.

5. GANDHI AND THE CRITICAL THEORY

Critical theory, a postmodern approach to IR, questions the modern theories' problem-solving mission. Modern theories of IR hold that the nature of international politics [its social and power relations and the institutions] is unchanging, therefore, the desirable step is to ensure its smooth functioning by fixing it. However, the critical theory rebukes this understanding of modern theory as non-historical or ahistorical. Because the problem solving theories argue that Westphalian institutions and its power relations are permanent. Critical theory rejects this claim of the modern theories as false, and argues that social and political order is not permanent but is changing. According to the critical theory, the modern theorists' plea for the permanence of a particular global order is to stabilize and legitimize the hegemony of a particular national, sectional or class interests. On the contrary to the move of the modern theories to stabilize the existing global order and its particular interests, the critical theory seeks to emancipate people from the yoke of the Westphalian global order, which exploits and marginalizes people.

Like that of the critical theorists' mission to expose the folly of modern theories, Gandhi also ventured to questions the claims of modernism through his seminal work, *Hind Swaraj*, in 1909 (Rudolph and Rudolph 2011). Gandhi was bringing out *Hind Swaraj* at a time when the Western world was claimed to be the champion of modernism through its experiments in the socio-political and economic fields. Modernism was conceived as a vehicle for achieving immense progress and order in society. Due to this reason, the political elite in the colonised world also endorsed modernism as a replicable model for the development in the post-independent period.

Therefore, Gandhi held it as his mission to question the folly of modernism with a prophetic vision and set forth an alternative path for a peaceful world order (ibid). Gandhi's critique of modernism was corroborated with later developments such as two World Wars, unending stories of genocides since the Holocaust, and the shortcomings of the developmental model itself cause resource depletion, ecological problems, unequal development and ethnic violence.

Terming it as the 'Modern civilisation', Gandhi challenged modernism and placed an alternative path for ensuring dignity and equality of a person that modernity cannot offer (Pantham 1996: 58). It is pertinent to look into Gandhi's understanding of 'civilisation' and 'Modern civilisation'. Gandhi borrowed Gujarati word *sudharo* [which means 'good conduct'] to define 'Civilisation' (De Bary 2004). According to Gandhi, "Civilisation is a mode of conduct which points out to man

the path of duty". In the collective sense, Gandhi considered civilisation as a way of life in society that shaped by interactions between various cultures, religions etc.

In the meantime, Gandhi coined the term 'Modern civilisation' to refer a condition as the opposite or perverted form of 'Civilisation'. He used Gujarati word *kudharo* [which means barbarism] to define 'Modern Civilisation. Gandhi made it clear that 'Modern Civilisation' addresses only temporal aspects of human beings such as *artha* [wealth] and *kama* [desires] and ignores *dharma* or spiritual aspect of human beings (Terchek 1998). 'Modern Civilisation' diverts human beings from the spiritual path by appeasing temporal aspects. Thus, Gandhi introduces 'Modern Civilisation' as the corrupted form of civilisation.

According to Gandhi 'Modern Civilisation' is claimed to be a 'Civilisation' but it is not true civilisation. He held a view that, 'Modern Civilisation' had emerged at a particular point of history in Europe and drastically changed its original civilization. Gradually, it affected all other civilisations in the world (Misra 2007: 83). Material progress and bodily comfort are conceived to be 'Modern Civilisation'. However, material progress and bodily comfort also carry the seeds of consumerism, economic exploitation, resource depletion, environmental degradation, diseases, violence etc. Therefore, it cannot be considered as true 'Civilisation'. Postmodern 'deep ecology' theorists also share the view of Gandhi in this regard. While contrasting true 'Civilisation' with 'Modern Civilisation' Gandhi rejected popular understanding that the modernism is the highest stage of social life.

Critical theorists such as Theodor Adorno and Max Horkheimer also agree with this view, even though they didn't subscribe to the Gandhian term, 'Modern Civilisation'. But they used the term, 'Enlightenment' to define a particular human condition that was akin to the Gandhian conception of 'Modern Civilisation'. According to Adorno and Horkheimer, 'Enlightenment' is a human condition, which craving for knowledge that is intertwined with power. The ultimate aim of 'Enlightenment' knowledge is to wield power, to control over things and human beings, therefore, it is potentially totalitarian (Delanty 2000). According to Adorno and Horkheimer, this [Enlightenment] knowledge is used to master the natural environment in the form of the development of the forces of production. The capitalist economy is very much indebted to this [Enlightenment] knowledge, as the former is sustained by the mass production of goods and commodity exchange. The perfect uniformity of consumer goods is the major characteristic of the mass production under a capitalist system. In this manner, enlightenment makes everything alike and dismantles individual qualities and turns against everything that seems to be repugnant to the existing system (ibid). Eventually the 'Enlightenment' itself becomes a totalitarian ideology. Therefore, critical theorists such as Adorno and Horkheimer also seek for an alternative approach that makes the

emancipation of humanity possible (Jones 1999). This alternative path is through the "reconciliation" with nature. In order to realise emancipation, human beings have to realise that they are part of nature rather than above nature (Jones 1999: 38). In the same manner of Gandhi, Adorno and Horkheimer also appeal to value nature and develop a non-technical relationship with it.

Gandhi and the Deep Ecology

Deep Ecology is a postmodern movement emerged as a critique of the modern narratives of development. This movement owes to Gandhi in terms of its approach to environment and also it's functioning as a non-violent movement. The term 'deep ecology' was coined by Arne Naess, a Norwegian eco-philosopher, in 1973. Deep ecology differs from the shallow ecology as the latter is focused only on short-term solutions for problems such as pollution and resource depletion. On the contrary, deep ecology strives to radically change the environmental policies. For deep ecology, environmental problems are the result of an anthropocentric development program driven by the industrial modernization. Deep ecology views humans as just one species on the planet. Therefore, humans have no exclusive right to dominate, exploit or destroy the environment. Hence, deep ecology appeals for a lifestyle compatible with nature.

Peace-building and Gandhi

Peace-building has emerged as a postmodern approach to peace. It is a people-centred approach distinct from the state-centric approaches such as peacemaking, peace enforcement, and peacekeeping. Peace-building is a process of establishing the political conditions that may lead to peaceful, stable and ultimately prosperous social and economic condition. The aim of peace-building is to transform conflicts constructively and to create a sustainable peace environment. Peace-building, as a strategy for bringing sustainable peace, earned international acceptance when the then UN Secretary- General Boutros Boutros-Ghali published "An Agenda for Peace" in 1992. According to Boutros-Ghali, the United Nations and other international organizations have to shift their focus from peacekeeping to peace-building. He defines peace-building as an "action to identify and support structures which will tend to strengthen and solidify peace in order to avoid a relapse into conflict", and "which can prevent the recurrence of violence among nations and peoples".

Before examining the contributions of Gandhi in conceptualizing peace-building it is pertinent to examine how does this approach differ from peacemaking, peace enforcement, and peacekeeping. Peacemaking is a diplomatic initiative to manage conflict in accordance with Chapter VI of the UN Charter. Peace enforcement refers to the efforts to pacify conflicts through military action with or without the consent of the parties to conflicts. Peace enforcement is employed through the heavily armed forces operating under the direction of the Secretary- General.

Peacekeeping is the deployment of foreign troops into areas either under ceasefire [post conflict areas] or violence have not broken out. (D'Anieri 2010). There are two duties assigned to the peacekeeping forces. First, to monitor peace process underway in the conflict-ridden area and provide reliable and unbiased report to the parties involved in conflict. Second, to prevent the possibility of conflict erupts into violence by ensuring the physical presence and surveillance.

Peacemaking, peace enforcement and peacekeeping are not employed as a permanent solution to conflict. They are focused only on the activities to halt ongoing conflicts and bring hostile parties to partial agreements or broader negotiated settlements. Most importantly, these are the state-centred approaches imposed from the top-level. Only the top-brass in the government, military, and bureaucracy is engaged in the peacemaking process. Peace enforcement and the peacekeeping are employed through the military. In all these approaches common people are the passive sufferers of the decisions taken and imposed from the top level. Even though common people are major victims of the peacemaking, peace enforcement, and peacekeeping they are not allowed to participate in the process. However, peacebuilding is employed through the active participation of people.

There are a number of factors that make peacebuilding more relevant in the post-Cold War period. The first is the changed nature of armed conflict. The number of inter-state wars declined, on the contrary, the intensity of intra-state conflicts has increased since the 1990s (Ryan 2013). The new situation of the war amongst the people is often called as "new wars" (Cortright 2008). The new wars are fought between communities divided by ethnicity, language, religion, and geography. It indicates that the common people are the targets of new wars. Since the 1990s millions have died in Congo, Sudan, and other African countries, and hundreds of thousands in former Yugoslavia and Iraq, and more than 80 percent of the victims were common people. In tandem with the death toll, the number of refugees and displaced persons has also increased sharply during this period (ibid). Other alarming feature of new wars is that it is employed to displace populations and gain control of territory and sources of income (Kaldor 2001). It shows that socio-economic and political factors such as unequal distribution and deprivation of resources and marginalization of people etc., are leading to conflict and violence. Deployment of security personnel cannot resolve conflicts emanate from these factors, but in such condition conflict may assume the nature of violent revolt. Therefore, we need a comprehensive approach that tries to promote socio-political and economic justice as well as to ensure sustainable peace. Peacebuilding does qualify as a comprehensive approach by touching all these factors.

The post- Cold War period witnesses growing concerns over human security for various reasons. Human security issues such as climate change, resource depletion, AIDS, terrorism etc., are today considered equally important as state security. These issues have the potential to harm

the security of each state. Moreover, there has been a growing notion that only state-centric approach is not enough to overcome the challenges faced by human security. This notion underlines the importance of participatory initiatives of both the state and non-state actors in addressing the problems related to human security. This participatory approach rejects the top-down approach of peacemaking, peace enforcement and peacekeeping. In peace-building, programmes and policies are framed in accordance with the will of the people. The post- Cold War period created a mood of 'democratic optimism', which holds that polity can be transformed qualitatively through non-violent means. This set forth a notion that peace can be evolved through non-violent means instead of coercive means employed in peace enforcement and peacekeeping.

Peace-building is the best way to resolve protracted, intractable, and deep-rooted conflicts. For instance, India-Pakistan conflict is protracted, intractable, and deep-rooted in nature. India-Pakistan conflict is protracted because it has been continuing since 1947. It is intractable in the sense that the conflict is an obstacle to make any positive change in relations between the two countries. Moreover, the conflict is primarily between the two governments but it is also deep-rooted in the thinking and attitudes of people in all walks of society across two sides. Due to the people-centric and participatory approach, peace-building can successfully resolve protracted, intractable, and deep-rooted conflicts.

Even though Mahatma Gandhi did not use the term peace-building, he is acknowledged as its mentor. He has transformed the concept of peace from its negative sense to a constructive one. Gandhi developed a distinct framework to understand conflict and bring sustainable peace. This was integrally related to his conception of human nature. It is pertinent to compare the traditional paradigm that conceived human nature, conflict and peace with that of Mahatma Gandhi. Thomas Hobbes is considered as the precursor of traditional realist approach, who set forth a paradigm to resolve conflicts in accordance with his understanding of human nature. For Hobbes, human beings are motivated by self-interests and often contradictory in nature (Graham 1997). Therefore, the period before the birth of political authority, human beings were in constant conflict with one another. In such a condition life was "solitary, poor, nasty, brutish and short". Upon realizing the danger of this condition, human beings became aware about the need of a mechanism to protect them. As far as Hobbes was concerned, rationality and self-interests persuaded human beings to combine in agreement, to surrender sovereignty to a common power (Kaviraj 2001). Hobbes called this common power, state, as Leviathan. According to the view of Thomas Hobbes, human nature itself was the source of conflict. Since a condition of all against all, it was impossible to evolve a mechanism for conflict resolution within society. Rather, a political authority was inevitable to prevent conflict. His view supported a unilateral state action instead of voluntary

initiatives for conflict resolution. There was no room for consensus among people, but the application of armed force was the only way to maintain peace. These notions have largely influenced in shaping traditional approach to conflict but proved to be inadequate in the present period.

Apart from Hobbes, Gandhi believed in the inherent goodness of human nature. Gandhi held that, all human beings had the capacity to develop their full potential of non-violence. He believed that all human beings were belonged to God. Since God and human beings were interdependent and interrelated, non-violence was the inseparable quality of the latter. For him, path to non-violence was none other than the path to God. Having belief in the inherent goodness of human beings, Gandhi developed a human centred approach for peacebuilding. Apart from physical force deployed by the political authority, Gandhi held that human beings had the potential to resolve conflicts through non-violent means (Sharp 1973: 4). Non-violence reminded as the most fundamental principle of his philosophy of peace. According to Gandhi, the universal human value of non-violence ought to be cultivated not merely at individual level, but also at village, national and global levels. This is the effective approach to bring and sustain peace in the World. In its ostensible sense nonviolence is the absence of violence, or the absence of mental intention of injuring, harming, disturbing and agonising opponent. But Gandhi imparted a positive meaning to non-violence by inculcating an altruistic approach.

Non-violent means were vital to Gandhi's peace-building efforts for several reasons. First, non-violence means not harming others either in thought or deed. Second, Gandhi viewed non-violence as also having more dynamic and positive state, i.e., love and compassion to the opponent. This love served as the means to get to the ends of truth. Gandhi held absolute Truth as God, and there was no difference between the absolute Truth and God in his belief. Since all human beings were belonged to God, each and every person had the property of Truth. Further he held that the Truth known to human beings was never absolute but relative and shared among them. Therefore, a seeker of Truth [God] had to adhere to the path of non-violence because unless he used the method of non-violence, he would not be able to be receptive to the notions of Truth held by others. For Gandhi, excluding the use of violence was the best, because humans are not capable of knowing the absolute truth and therefore not competent to punish. Gandhian understanding of end and means played a major role in shaping his peace-building approach. Gandhi believed in the purity of end and means and their inseparable unity. If we want achieve a noble end, then we have to employ pure means, otherwise our end will become foul due to our wrong means to achieve that. It upholds the idea that the means justify the end. Gandhi's argument is that we have control over only the means. The end is beyond our control. If our aim is to bring peace, but we are not sure whether we will success in our noble mission. But one thing we can

make sure is that the employment of only peaceful means in our initiative. Therefore, we must take care of the means and the end will be assured (Dayal 2006).

In Gandhi's philosophy of life, means and ends are used as convertible terms. This means that the end and means could be exchanged with each other and the result will be the same. Pure end requires pure means and pure means will inevitably result in pure end. This is why he holds that Non-violence and Truth are so intertwined that it is practically impossible to separate them (ibid). Gandhi argued that separating means from end is a great mistake. For him it was like planting a noxious weed for getting rose flower, or crossing the ocean in a bullock cart. By preferring the inappropriate choice we are drifting away from our intended goal (ibid). According to Gandhi the means may be likened to a seed, the end to a tree, and there is the same inviolable connection between the means and the end and there is between the seed and the tree (Bharathi 1991). Gandhian understanding of the unity between end and means influenced him to develop peaceful means to build peace. For him, violence engenders violence, revenge leads to counter-revenge and war sows the seeds of further wars (ibid). Having rejected the wrong path of violence, Gandhi shaped Satyagraha as a peaceful method to build peace.

Gandhi developed a participatory peace-building approach by involving all parties to conflict. The best example of his peace-building in this regard was the Noakhali incident. Subsequent to the partition of India communal riots, genocides and mass level displacement of people occurred in various parts of the country. Noakhali in Bengal was one such area which torn apart by communal divisions and violence. Mass killings and sabotages transformed Noakhali into a grave yard. Gandhi visited every nook and corner of the area and painstakingly did his best to bring back Noakhali into normalcy. He engaged in dialogues with the disputing parties in the area for dispelling misunderstanding and hostility among them. In order to put violence an immediate end, Gandhi started fasting on 2 September 1947. By the next the parties involved in conflicts approached Gandhi and laid down their arms. Mixed processions for communal harmony took place in various parts of Noakhali. A delegation of prominent political and religious leaders visited and assured Gandhi that there would be no communal violence in future. Gandhi organized prayer meetings to facilitate inter-faith understanding and communal unity. By involving all parties to the conflict in peace process and cultivating inter-faith understanding Gandhi could successfully build peace in violence torn areas (Guha 2007).

6. CONCLUSION

Mahatma Gandhi pioneered postmodernism much before it became a trend in academic circles. He challenged the ontological and epistemological standpoints of modernism in its high

noon. On the contrary to the modernist approach to explain international politics in terms of economic and military power, Gandhi endorsed ideational construction of international politics. Due to the presence of measurable variables such as military capacities and economic resources, epistemologically modern theories of IR adopted the positivist methods in analysing the developments in international politics. By doing so, modern theories have became, 'meta-theories' in IR that invalidated theories outside the premises of their ontological and epistemological standpoints. Gandhi held it as a strategy of advocates of modernism to sustain the hegemony of 'Modern Civilisation'. Instead of sustaining it, Gandhi advocated for alternative model of international politics. He envisaged a post-Westphalian system based on the concept of '*Swaraj*'. Gandhian influence in shaping the postmodern theories are obvious with the constructivism's understanding of international politics as an ideational construct, critical theory's mission to emancipate humanity by replacing the Westphalian system with an alternative one, and deep ecologies plea for an eco-centred global order.

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Intellectual Property Rights and Biodiversity Associated Traditional Knowledge (BATK): The Indian Experience

Salvin Paul*

Abstract

Biodiversity Associated Traditional Knowledge (BATK) is the foundation of the many innovations in the current pharmaceutical and other related industries. There has been huge outcry from the indigenous people that the scientific community uses their knowledge to amass millions of dollars from the market without their consent and proper return. This process has been legitimised with the institutionalisation of IPR. So there is direct link between biodiversity associated knowledge and market as the scientific community heavily depends on the former for the new lead. But one of the major questions is as to whether the intellectual property regime would be able to protect the interests and rights of the custodians of biodiversity associated traditional knowledge? Why TK cannot be protected under IPR framework as scientific knowledge? If not, what are the alternatives available to protect this intergenerational knowledge which is valuable to biotechnology? IPR protection is purely economic, whereas the interests of the peoples are only partly economic and linked to self-determination. Given this perceived incompatibility between IPR and traditional knowledge, there is a case for the development of a sui generis regime specifically adapted to the nature and characteristics of indigenous knowledge. Such questions related to IPR protection have been examined in this article to understand and analyze the experience of regimes that protect BATK in India.

Keywords: Biodiversity Associated Traditional Knowledge, Intellectual Property Rights and Biotechnology

1. INTRODUCTION

Biodiversity[1] is defined as 'the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems'.

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Biodiversity plays an important economic, social, and cultural role in the lives of indigenous and local communities. Agriculture, pharmaceuticals, forestry, fisheries, and tourism are all key areas that are heavily dependent upon biodiversity, attracting the attention of industry researchers and investors. Management of biological resources has a profound effect on biodiversity and the ecological services that sustain life. Habitat destruction as a result of competing human needs has resulted in the loss of numerous plant and animal species, some known and others unknown.

Biodiversity is mostly located in the global south. The region's countless varieties of plants and trees are viewed as a treasure trove of genetic material with innumerable potential applications. One of the easy ways to identify a useful compound is to review the work of local communities that have long studied and experimented to uncover the medicinal, agricultural and scientific properties of these resources. The "discovered" compound can then be patented by the researchers, enabling them to exploit the biological resource for a profit and to exclude others from freely accessing and exploiting their proprietary resource. The local communities that developed the know-how, by contrast, owns nothing and receives nothing as the legal system places their technology and knowledge in the public domain.

Most legal regimes award the mantle of 'property', with its attendant rights, only to the tangible goods produced by indigenous cultures, paying no attention to the contexts in which those goods were produced and used. As a result, these legal regimes too often try to force indigenous resources into property definitions external to the cultures themselves. In this process, indigenous cultures wind up compartmentalised, with artifacts entitled to legal protection as 'cultural property', but with the real wealth of indigenous peoples - their traditional knowledge about biodiversity, their folklore, designs and traditions-left outside this mantle of protection. This compartmentalisation under the western Cartesian worldview in a way facilitates the transfer of wealth from indigenous cultures to multi-national corporations (Bratspies 2006-2007).

2. THE DEVELOPMENT OF INDIGENOUS PEOPLE'S KNOWLEDGE

Indigenous peoples[2] are fully identified with their natural and cultural environment. The knowledge that these societies hold about their ecosystems, combined with their management experience constitute a repertoire that would enable an empowered advancement in their economic, political, cultural, and spiritual development. The universe

of knowledge held by indigenous peoples is a result of a diachronic, intergenerational, communal and holistic collection of 'in-corporated' information about their local environment. It consists of an intellectual construction resulting from the accumulation of experiences over historic time and across the social and natural space. Indigenous peoples and their communities not only possess detailed information about species of plants, animals, mushrooms and some microorganisms, but also they recognise many types of minerals, soils, water, snows, vegetation and landscapes.

The knowledge is holistic because it is intrinsically connected with the use and management of local ecosystems; it is consistent with their cosmovision. In terms of the practical management of natural resources, they apply a permanent and systematic observation procedures to long and short natural cycles occurring in different spatial scales: not only at local levels but also on more extensive geographical spaces. Everything must be monitored: from the birth-giving of animals or the sprouting of a plant, to the frequency of hail storms and their connection with animal or plant sicknesses. With regard to cosmovision, their set of beliefs and values determines their attitude towards nature which, considered a sacred mother, is subject to a variety of expressions of utmost respect (Muñoz & Patrick 2006).

Value of Traditional Knowledge in the Global Economy

Biodiversity associated traditional knowledge[3] is considered as the cradle of inventions that provide leads in the discovery, development, and manufacture of pharmaceutical products. Ethno-botanical knowledge is a foundation for the pharmaceutical and other related industries.

The Use of Traditional Knowledge by Industry Sectors

Sector	Manner of Use	Source
Pharmaceuticals	TK is not considered a useful tool during the early stages of high-throughput screening, but once an active compound is identified, most companies use TK (when available) to guide subsequent research. A (very) few companies direct their research programs based on TK; some will use TK as the basis for setting up screens to select for competing (or better) compounds with similar bioactivity, that is, as a reference compound to select more active synthetic analogue compounds.	Literature, databases, inter-mediary brokers. A minority of companies commission field ethno botanical collection. Ethnobotanical information is often attached to samples as an "add-on," even if collections are primarily chemotaxo- nomic or ecology driven.
Botanical medicine	TK is used as the basis of identification of potential new product development; in safety and efficacy studies; and formulation. It is widely used in marketing commercial products, sometimes in developing wildcrafting or cultivation strategies for raw materials.	Literature, databases, trade-shows, Internet, and so forth. Middlemen brokers will follow up on leads in literature with local communities and research institutions. In rare cases the literature leads marketing companies to conduct field-based research on species of promise; this is directed, rather than bulk collecting, research.
Personal care and cosmetics	TK is used as the basis of identification of potential new leads and to direct research on a species' commercial potential. It is used in safety and efficacy studies; is widely used in marketing commercial products; and is sometimes used in developing sourcing strategies for raw materials.	Literature, databases, trade shows, Internet, and so forth. Occasionally, middlemen brokers will follow up on leads from the literature with local communities. Companies conducting high-throughput screening will commission the collection of ethnobotanical samples with identified uses. Other companies have entered into direct, field-based partnerships with communities to use their TK in product development.
Crop protection	A small proportion of companies use TK to guide the collection and screening of samples. As with pharma-ceuticals, once activity is demonstrated, TK is sometimes used to decide on the direction of subsequent research.	Literature, databases.
Biotechnology	Many biotechnology applications, such as brewing and bread-making, are based on TK dating back millennia, but contemporary biotechnology makes little use of TK.	
Seeds	Companies make little use of TK, but they do use germ plasm that has been pre bred by other organizations to which genes from traditional varieties may have made an important contribution.	
Horticulture	Many popular ornamental varieties and horticultural vegetable crops owe their existence to traditional domestication and selection over long periods of time. However, TK is rarely used in the selection and breeding of new horticultural varieties today.	

Source: J. Michael Finger & Philip Schuler (2003): "Poor People's Knowledge Promoting Intellectual Property in Developing Countries," Washington DC: The World Bank.

Traditional peoples and communities are responsible for the discovery, development and preservation of a tremendous range of medicinal plants, health-giving herbal formulations, and agricultural and forest products that are traded internationally and generate considerable economic value. TK is also used as an input into modern industries such as pharmaceuticals, botanical medicines, cosmetics and toiletries, agriculture and biological pesticides. So TK has an important role in the global economy. For pharmaceuticals, the estimated market value of plant-based medicines sold in 1990 was $61 billion. Grifo and others demonstrated that the top 150 plant-derived prescription drugs are derived from the traditional medical use. Norman Farnsworth's estimate that of the 119 plant-based compounds used in medicine worldwide, 74 per cent had derived from TK. But it is impossible to estimate accurate value of TK. Because TK is an essential component in the development of many products, and most TK derived products may not enter modern markets. Besides, TK's cultural and spiritual value cannot be measured in monetary terms (Dutfield 2002).

Pharmaceutical research greatly benefit from sampling medicinal plant knowledge to avoid the process of screening all of them which is time-consuming and costly. Thus, TK can minimise search costs and drive researchers toward the most promising therapeutic paths. In this manner success of research to make products is much higher than conventional practise of sampling entire plants and passing those costs to consumers (McManis 2004). Western practices with the use of indigenous medical plant knowledge, the possibility of "developing at least one marketable pharmaceutical from 1,000 samples grows from 22 percent to 78 percent or three and half times." Similarly, when using traditional knowledge, the efficiency of screening plants for medicinal properties increases by more than 400 percent.

According to one of the estimates, the annual market value of pharmaceutical products derived from tropical rainforest plant-based medicinal knowledge of indigenous peoples exceeds $32 billion. Traditional healers have employed most of the compounds used in modern medicine today for centuries. For example, twenty five percent of American prescription drugs contain active ingredients derived from indigenous knowledge of plants and seventy-five percent of these have been gathered from information provided by indigenous peoples. All over the world a number of pharmaceutical companies are dedicated to drug discovery based on indigenous or so-called "shamanic" knowledge. Such appropriation threatens the cultural integrity of indigenous knowledge, because the knowledge-protection and reward mechanism of the Western intellectual property regime is not designed to accommodate epistemic narratives other than Western science. There are several ways IPRs are mismatch for indigenous knowledge forms (Oguamanam 2004).

This has become an issue at many national and international foras due to its commercial potentiality. Scientific developments in the fields of biochemistry, molecular biology, cell biology, immunology, and information technology continue to transform the process of product discovery and development. Scientific community's inhibition to acknowledge and share the monetary benefit with indigenous community is a rare practice in the society. So there is direct link between biodiversity associated knowledge and market as the scientific community heavily depended on former for the new lead. Studies of Kate and Laird show that there is huge global markets for products in the healthcare, agriculture, horticulture, and biotechnology sectors derived from genetic resources which is approximately estimated between US$500 billion and US$800 billion (Kate and Laird 1999).

There are annual sales of between US$75 billion and US$150 billion of pharmaceuticals and between US$20 million and US$40 billion worth of botanical medicines derived from genetic resources each year. Farnsworth and others make a direct link by saying that approximately 120 pharmaceutical products derived from plants in 1985, 75 percent were discovered through the study of their traditional medical use (Farnsworth et. al 1985).From this viewpoint, TK solves a market failure problem by providing incentives to invest in potential paths of research. Indigenous creation of TK is not driven by the incentives of a market economy; local communities do not aim at obtaining exclusive rights to exploit their innovations, as such knowledge is generally shared within the community(Overwalle 2005).

Misappropriation of TK and biological resources pose serious environmental risks due to unregulated and unmonitored taking of biodiversity. This process severely damages the Developing Countries' economy. First, Developing Countries are deprived of the right to trade their biodiversity with foreign companies and make a profit. Similarly, when foreign companies succeed in patenting inventions based on TK in their own countries, these companies deprive indigenous communities' right to export their knowledge to profit from it. Moreover, as Professor James Boyle has pointed out, TK often flows out of Developing Countries free of legal constraints and yet returns embedded in foreign patents. When this occurs, there is a strong risk that indigenous people lose any opportunity to retain and exploit their collective knowledge in their own country (Arezzo 2007).

Hocking looks at the often-cited connection between indigenous knowledge and environmental protection. There is no doubt that 40,000 years of resource use by original inhabitants in Australia did not bring about as much change in the landscape, biodiversity and the knowledge systems as the 200 years of European rule. There is a merit in recognising the dynamic interplay that exists between the contours of creativity within indigenous or traditional knowledge system and the influence of interaction with formalised science. It is not that the local knowledge becomes less local when it incorporates the elements of modernity. The modern

also becomes local when it is contextualised in a local use system. For instance, when a farmer makes selection of an off type plant from an institutionally released plant variety, he develops a local adaptation by selecting that mutant. Thus, the road that connects local or indigenous knowledge with institutional science and knowledge systems is actually a two street. It is true that traffic form one side is much more than the other.

The ethical values that indigenous communities have evolved for sustainable resource use are an important building block of modern institutions. The modern systems have put sustainability at much greater risk than the traditional systems. But it is also true that with increase in population, general health and education levels, the ability of traditional systems to sustain the economic and social aspirations may not be easy. In fact, the very effort to map local knowledge on institutional scientific parameters is to reduce the relative importance of both. The contention is that local knowledge provides the possibility of creative and innovative exploration of resource use opportunities by people who are extremely physical and economic resource constrained.

The sterile debate between the conception of science as being opposed or distinct from the formulations about the way world is in local knowledge, needs to be abandoned. Just as scientific systems accommodate use of local knowledge in refining the scientific principles, local knowledge systems can also use scientific principles for achieving the similar goals. There should be a synergy between the local and the global, formal and the informal and indigenous and the exogenous (Gupta 2010).

Conservation of biodiversity and other natural resources over a long period of time has been possible because of the cultural, spiritual and other social institutions that have guided the relationship of local communities with the resources. It is not just the resources but also the knowledge about these resources, which have been conserved through practice and innovations. It has been generally believed that the knowledge systems of local communities and indigenous peoples are holistic in nature. Centuries of association with an environment have produced a deep understanding of the inter-relationships among the different elements of a landscape or a habitat. Because fluctuations in the environment require adaptive responses, communities have developed a wide range of diversified survival strategies at intra and inter-household levels as well as at community level (Gupta 2000).

Similarities between Traditional Knowledge and Scientific Knowledge

Researchers have tried to portray traditional knowledge systems as totally different and opposed to the so called modern and western knowledge systems. Some aspects of

traditional knowledge systems contain most of the elements that make a scientific proposition valid. At the same time, many scientific institutions use traditional cultural symbols and practices to generate an extra ounce of confidence or certainty (Gupta 2000). Indigenous knowledge is differentiated from formal Western knowledge as it is transmitted through oral traditions, dynamic and varies within and between societies as well as within and between generations, and finally it is both 'a way of life' and a 'worldview' (Maragia 2006: 203-204). In the informal knowledge system, the method of knowing, feeling and doing follows a very different logic than in the formal system. The problem arises when one tends to ascribe local knowledge a consistency, which is impossible among so many variations of locals. In other words, the expectation that universalistic features of institutional science would somehow become apparent in indigenous or local knowledge is only partly true.

Local and indigenous knowledge systems, while generally holistic, have some reductionist elements too. In order to cope with the complexity of ecological change, some people in the community specialise by knowing more and more about less and less. Such specialised expertise requires focusing, targeting and steering strategies on specific themes or aspects of nature. So-called Western science is biased in favour of reductionist relationships, whereas local knowledge systems are biased in favor of systemic linkages and a holistic perspective on nature. Local and indigenous knowledge system is not static. They evolve, adapt and transform dynamically with time. New materials are incorporated, new processes are developed, and sometimes new uses or purposes are evolved for existing knowledge besides the acquisition of knowledge. Hence, there is a need for rewarding not only traditional knowledge but also contemporary innovations.

Transfer of traditional knowledge from one generation to another in a cultural context that is quite different from the scientific knowledge. But one cannot deny the scientific nature of traditional knowledge systems as traditional ways of knowing are different. The production and reproduction of knowledge, innovation and practices are adapted to the distinctive cultural set up of the particular community and every generation contributes to improvise it further to advance the frontiers of knowledge by blending it with other knowledge systems. Indigenous ingenuity based knowledge systems are sustainable in nature and have less inimical impact on the environment and biodiversity compared to the so-called scientific knowledge systems (Gupta 2001). So, indigenous knowledge need not essentially be traditional in nature. Contemporary knowledge serving indigenous ends, or using indigenous materials or processed through indigenous rules or heuristics can also be part of indigenous knowledge systems provided it is interpreted through local cultural meanings. The cognitive anthropologists also used the word 'ethno' to characterise the knowledge of local communities such as ethno-botany or ethno-zoology.

Gupta argues that there is a need for modifications and adaptations in the IPR laws to reward different kinds of contributions by individuals and communities in long past or recent times through improvement or innovations in local materials, knowledge systems, or external materials or knowledge systems or a combination of these (Gupta 2000). Rose Mary Coombe acknowledges, "that opposition between dominant and indigenous culture are often over-simplified, blurring the actual fluidity and permeability of knowledge and cultural boundaries. Just as dominant cultures appropriate knowledge from indigenous ones, indigenous knowledge itself contains knowledge shared between cultures, as well as information brought by colonists, settlers, and traders (Gupta 2000). The learning between formal and informal can indeed be a two way street. The problem is that today the traffic from formal to informal is much heavier and often uncontrolled.

It is very important to understand that different indigenous and local communities develop knowledge systems through a tradition of invention and also develop languages through which to articulate their knowledge systems. If a language dies, a knowledge system partly or completely dies with it. Hence, the conservation of language or oral tradition become a crucial factor for conserving taxonomies because each word, conceptually speaking in the context of a natural resource, is a category. Modern science will benefit a great deal and so will the ability of humans to understand their environment and cope with it, if the scientific basis for these categories is better understood.

The property right regime governing a resource influences not only the constellation of stakeholders but also the possibility of disadvantaged communities and individuals benefiting from a resource-centered benefit sharing mechanism. Benefit sharing need not be seen only among international users of resources and knowledge but among by the domestic users. After all a tribal community or individual healer gets no respite from the fact that the exploiter is from within the community or country and not from abroad. In most developing countries, the greatest damage to the biodiversity and greatest exploitation of local communities has been caused by domestic interest groups in relative terms, exceptions apart.

3. TRADITIONAL CULTURAL EXPRESSION AND SELF DETERMINATION

Michael Blakeney (2006) considers the protection of traditional knowledge assumes the necessity and the primary beneficiaries of this protection will be Indigenous peoples and community groups. However, the state as guardian of its people's cultural heritage, also has an interest in the preservation of the traditional knowledge which exit within it. A corollary to the assumption of the necessity to protect traditional knowledge, is the assertion of the right of

Indigenous peoples and traditional communities "to determine the appropriateness of the use being made of their culture". Thus Erica-Irene Daes (1993) states that, "each indigenous community must retain permanent control over all elements of its own heritage. It may share the right to enjoy and use certain elements of its heritage under its own laws and procedures, but always reserves a perpetual right to determine how shared knowledge is used". For Fourmile (1989) Indigenous peoples in Australia regard the protection of traditional knowledge as an issue of self-determination.

So far, the dynamic seems to be a tug of war between two alternative property visions: state ownership of biological resources, as articulated in Article 8j of the Convention on Biological Diversity (CBD), and private ownership of these resources under the WTO's TRIPS agreement. There is, however, a third aspect to this struggle over traditional knowledge and biological resources. Most of the world's remaining biodiversity exists within indigenous lands and territories. Rather than as an aspect of state sovereignty over territory, or the fruits of private invention, indigenous leaders conceive of these resources as an aspect of self-determination, as recognition of their fundamental rights to property and culture. Indigenous groups are thus trying to expand the discourse over biological resources so that it includes their interests and their hopes for wresting back control over their territories, resources and heritage. Indigenous peoples find themselves in direct conflict not only with states but also with multinational corporations-all vying for control over traditional knowledge, land and resources. As has happened throughout history, aboriginal peoples are too often finding themselves on the losing end of this struggle over ownership and access to resources (Bratspies 2006-2007).

The Relevance of Customary Law

Common to the sui generis instruments is the requirement to ascertain and enforce traditional knowledge in accordance with the practices of indigenous groups. Customary law, as the system of rules and customs that governs conduct and rights in such groups, would therefore be relevant to any analysis of rights and obligations under traditional knowledge provided for under the sui generis models.

In general, customary laws are not uniform across ethnic groups in indigenous societies. Differences in the customary laws of indigenous groups can be traced to such factors as language, proximity, origin, history, social structure, and economy. Generally, the customary rules among ethnic groups speaking a common language tend to be similar, but the rather significant differences that can sometimes exist make it misleading to talk of a uniform customary law rule applicable to all members of the language group (Allott & Cotran 1971).

An important characteristic of customary law is its dynamism. Customary law is not static, and its rules change from time to time to reflect evolving social and economic conditions. Like any system of unwritten law, customary law has a capacity to adapt itself to new and altered facts and circumstances as well as to changes in the economic, political, and social environment (Cotran& Rubin 1970).

Similar elements are found in the definitions of folklore, traditional knowledge, and indigenous knowledge, suggesting a link with customary law. In relation to folklore, it has been noted that "descriptions of the amorphous term folklore tend to emphasise its diverse nature, as consisting of, for example, the traditional customs, tales, sayings, or art forms preserved among a people," applicable "not only to ideas, or words, but also to physical objects." Other characteristics of folklore include "its oral nature, group features, and mode of transmission through generations of people" (Kuruk 1999).

In this sense, customary law on the one hand, and traditional knowledge and indigenous knowledge on the other, are interrelated. Accordingly, one cannot seek to understand traditional knowledge without reference to customary law which is the system within the scope of rights in such knowledge is determined. This link also suggests that solutions to traditional knowledge issues drawn from customary law are likely to be more successful than the western oriented top-down approaches reflected in current international instruments on traditional knowledge (Riley 2005).

4. THE BIODIVERSITY IN INDIA

The biodiversity and associated indigenous knowledge systems are the two invaluable capital assets of countries like India. The Indian subcontinent that is blessed with unique geographic position, distinct physiographic, edaphic and climatic zones and gradients, abodes a very rich and diverse flora and fauna with high percentage of endemism. According to the latest assessment, it is placed as 10th among the plant rich nations of the world and 4th among the Asian countries. Out of the 25 global 'hot spots' of Biodiversity two are located in India - The Eastern Himalaya and the Western Ghats. Based on the uniqueness of the phytogeographical zones and pattern of endemism, 25 micro hot spots centres of endemic flora have also been identified in India.

India's species richness is complemented by enormous genetic diversity found within individual species. This indeed makes India one among the 12 mega gene centers of the world. India's biodiversity is thus marked by the occurrence of diverse types of ecosystems, high species diversity with high incidence of endemism, and enormous genetic diversity in crop plants, domesticated animals and their wild relatives. The rich biodiversity of India is matched with an equally rich cultural diversity, and there exists a unique wealth of Traditional Knowledge

System (TKS) associated with the conservation and sustainable use of biological resources. Thus, an important aspect of protecting biodiversity is the protection of indigenous knowledge of local communities.

TKS embody a plethora of unique time-tested knowledge, wisdom, beliefs, traditions and practices associated with conservation and sustainable use of biogenetic resources. The traditional knowledge base of Indian ethnic and local communities is perhaps the richest in the Third World. India's tribal and folklore traditions, particularly the traditional medicine systems are rich and unique. And, India's herbal or traditional medicine systems have the potentials to capture the world drug and pharmaceutical markets, provided the country strives to bring in substantial improvement and value addition to the existing traditional knowledge base through appropriate scientific and technological intervention and policy support. The biological wealth and associated traditional knowledge systems of India offer excellent opportunities ahead for harnessing the biocultural diversity for generation, protection and maintenance of intellectual property rights (IPR) in the domains of herbals and other national product development technologies and related knowledge-based commercial and industrial ventures.

Bio-Piracy[4]: The Indian Experience

There have been several cases of bio-piracy of traditional knowledge from India. First, it was the patent in the US PTO on wound healing properties of *haldi* (turmeric), then there was the patent granted on the *neem* derivatives in the European Patent Office (both of which were got revoked through considerable time, effort and expenditure by the public/NGO sector of India) and now patents have been obtained in other countries on hypoglycemic properties of *karela* (bitter gourd), brinjal etc (Kaushik 2002).

TK is created and shared by the members of local communities. It is the fruit of an intergenerational process, whereby generations pass on their cultural heritage which continuously grows. There is no need to commercially trade TK within the indigenous communities, there is no fear of such knowledge being stolen, and thus local people have not been compelled to codify it in a written form (WIPO 2003).

Bio-piracy of India's Traditional Knowledge

1. *Basmati* Rice: patented by RiceTec, Texas, USA in 1997 as aromatic rice. Recently on challenge by APEDA, withdraw four claims of its uniqueness. The use of the term '*Basmati*' by RiceTec was also challenged on the inappropriate trademark usage (Texmati) and violation of Geographical Indication. However, the International Centre for Technology Assessment (ICTA, Washington, DC) and Research Foundation for Science, Technology and Ecology (RFSTE, New Delhi) have filed a suit to restrict the use of the term Basmati (and Jasmine of Thailand) to rice varieties grown in India and Thailand, respectively.
2. Turmeric: Patent granted to University of Mississippi Medical Centre (for wound healing) in the US, was revoked on challenge by CSIR.
3. *Neem*: Patent granted to W.R.Grace& Co., UK and US Department of Agriculture was vacated on challenge.
4. *Karela, Jamun* and Brinjal: Patent granted to Cromak Research Inc., US on edible herbal compositions comprising the mixtures of the above to reduce sugar levels.
5. Pepper: patent granted by US patent office.
6. *Aswagandha*: patent granted to Relive International Inc. as a supplement for healthy joints. US patent office also granted a dozen patents on Aswagandha-centred findings.
7. Herbal Products: *amla, vasabr, saptrangi, bel* etc. NatreonInc was granted patents for 13 claims of *amla* by US patent Office, application also filed with European Patent Office.
8. Hessian (Jute cloth): Patent granted to UK firm by the European Patent Office, patent revoked on challenge by Jute Industrial Research Association of India.
9. Ginger: US patent Office granted patent on eight ginger formulations.
10. Tea: patent applied by George Williamson & Co., UK (Method of manufacturing and packaging).

It may be granted that the Indian Patent granted to Agaracetus of the US on tissue culture of cotton cells was revoked in public interest in view of mounting criticism from the farmer community in India on its impact on the farming of major crop in India.

Source: M.B Rao & Manjula Guru (2003): *Understanding TRIPS: Managing Knowledge in Developing Countries*, New Delhi: Response Books, 168.

Major Initiatives to protect BATK in India

Post independent India has witnessed number of legal initiates that try to protect the Biodiversity and associated traditional knowledge posing both challenges and opportunities since

their inception. They are; Indian Forest Act, 1927; Indian Wildlife Protection Act, 1972, Forest Conservation Act, 1980; The Protection of Plant Varieties and Farmers Rights Act of 2001 and Biological Diversity Act, 2002 and its rule in 2004. Indian Forest Act, 1927 classified the forests into three categories such as reserve, village and protected forests to govern and manage the resources of biodiversity. The Wildlife Protection Act 1972 aims to preserve wildlife of both animals and plants protection and propagation through *in situ* and *ex situ* measures. The Forest Conservation Act, 1980 focus the conservation of forests by regulating the non forestry activities. Though above mentioned acts protect the biodiversity in general but the globalization of IPR and emergence of biotechnology and allied industries have brought specific challenges to Biodiversity Associated Traditional Knowledge.

The Protection of Plant Varieties and Farmers Rights Act of 2001

India's move toward promoting agricultural trade was partly prompted by the entry of foreign seed corporations into the Indian market in the early 1980s, which gave rise to demands for IP protection. Thus, the Protection of Plant Varieties and Farmers' Rights Act (PPVFA) is generally perceived as an outcome of the pressures from India's membership in the WTO, as well as entry of foreign corporations into the market.(Ragavan&O'Shields 2007: 114).

India, with a view to fulfil its TRIPS obligations, passed the Protection of Plant Varieties and Farmers Rights Act of 2001 (PPVFA). Criteria for the registration of new plant varieties include novelty, distinctiveness, uniformity, and stability. The term of protection is nine years for trees and vines and six years for other crops, renewable for a further nine years (for extant varieties of trees and vines, or a total of 15 years for annual crops from the date of notification under the Seeds Act 1966). However, under Chapter VI of the Act, a farmer is entitled to save, use, sow, resow, exchange, share or sell his farm produce, including seed (except branded seed), of a variety protected by the Act.

The central tenet of the PPVFA is to address India's national concerns about protecting the rights of traditional farming communities, while at the same time promoting plant breeding by vesting IP protection. Thus, the PPVFA lumps plant varieties into three protectable categories: (a) New Varieties, (b) Extant varieties, which refer to existing varieties discovered for the first time, and (c) Farmers' Varieties, based on community property concepts.

Unlike UPOV, the PPVFA bears a set of public interest exceptions to registration of a new variety. A new variety, for instance, becomes unregisterable if it is likely to deceive the public, hurt the religious sentiments of any class or section of Indians, or cause confusion regarding the variety's identity, or is not different from every denomination which designates a variety of the same botanical species or of a closely related species registered under the Act.

The extant variety typology itself was introduced to protect traditional knowledge and indigenous rights. An extant variety may be registered by a breeder, farmer, a community of farmers, a university, or a public sector. Although a breeder can register an extant variety, he is not entitled to exclusive rights over the variety. Section 28 of the Act provides that the Government, as the owner of the extant varieties, enjoys the rights to determine their production, sale, marketability, distribution, importation or exportation. The objective is to protect biodiversity by empowering the government to negotiate with entities that require biodiversity materials for creating biotechnology innovations (Ragavan&O'Shields 2007: 115-116).

A 'farmers' variety' is one 'which has been traditionally cultivated and evolved by the farmers in their fields, or is a wild relative or land race of a variety about which the farmers posses the common knowledge.' However, while a farmer can be a breeder qualifying to register a new variety, a community of farmers that creates a new variety, for instance, will not qualify for registration of the breeders' variety. The breeders' variety is based on the western notion of IP rights. The important aspect of a farmers' variety is not to appease farmers, but to create community property rights in contrast to the breeders' variety (Ragavan & O'Shields 2007).

The Act also provides for benefit sharing. Once the certificate of registration is issued, the Authority publishes the contents of the certificate and invites claims of benefit sharing in the registered variety; claims are accepted only from Indian citizens or institutions established in India. Moreover, any person or group of persons may, on behalf of any village or local community in India, file a claim attributable to their contribution to any new variety (Section 41).

Compulsory licences may be granted after three years from the date of issue of the certificate of registration. The term of a licence will be determined by the Authority, who must ensure reasonable compensation to the breeder (Section 51). The compulsory licence can also be revoked or modified by the Authority at any time. No compulsory licence has been granted so far. Infringement is defined as: the sale, export, import or production of a protected variety without the permission of its breeder or within the scope of a registered licence without the permission of the registered licensee or agent; or the use, sale, export, import or production of any other variety that is given an identical or deceptively similar denomination of a variety registered under the Act so as to cause confusion. The Act also deals with penalty/fine for applying a false denomination, selling varieties to which a false denomination is applied and falsely representing a variety.

Biological Diversity Act, 2002

The Biological Diversity Act of 2002's[5] Statement of Objects and Reasons notes that the Central Government, after an "extensive and intensive consultation process," has decided to bring

legislation, inter alia, "to respect and protect knowledge and information of local communities related to biodiversity and to secure sharing of benefits with local people as conservers of biological resources and holders of knowledge and information relating to the use of biological resources." The Act establishes a National Biodiversity Authority with plenary powers to administer the Act.

Any person who is not a citizen of India, a non-resident citizen or a corporate body not registered in India, or registered under law having non-Indian participation in its share capital or management, is not authorised to obtain any biological resource or knowledge without the previous approval of the National Authority. It is interesting to note that the provision, while empowering the National Authority to grant approval, does not in any way refer to the necessity of consent of the communities whose resources are being approved (Dam 2006: 331), provided that the provisions of this section shall not apply to the local people and communities of the area, including Vaids and Hakims, who have been practicing indigenous medicine. It would be noted that access is granted to citizens only after prior intimation, while it is granted to foreigners after prior approval. The different approaches appear to have been necessitated because while it might be easy to bring a citizen under the jurisdiction of the competent authorities and the Courts, this would be impossible for foreigners. Secondly, not only access to the resource, but even transfer of research results abroad are prohibited without approval of the competent authority. This appears to be recognition that knowledge about the resources is as important as the resources themselves for the purpose of ensuring conservation.

Of course, this prohibition does not extend to 'collaborative research'. Thus, research conducted with the approval of the Government, and that meets the guidelines to be laid down by the Government, is permitted by foreigners also. Thirdly, no one can apply anywhere in the world for an IPR on knowledge based on a resource obtained in India without approval of the competent authority (Kaushik 2002).

The National Authority's discretion to grant approval is limited by a necessity to ensure "equitable sharing of benefits in accordance with mutually agreed terms and conditions between the person applying for such approval, local bodies concerned and the benefit claimers." The limitation contained in this provision is of little consequence though because it does not address the issue of consent of the communities per se. On the contrary, the provision presumes the existence of a standing consent and imposes an obligation on the National Authority to evolve a formula for "equitable sharing of benefits." By not allowing communities, tribal or otherwise, to decide whether to allow aspects of their cultural life to be made subject matter of commercial utilisation, the provision infringes the communities' fundamental right to culture (Dam 2006).

Below the National Authority and the State Boards, the Act does permit local bodies to create a "Biodiversity Management Committee for the purpose of promoting conservation, sustainable use and documentation of biological diversity including preservation of habitats, conservation of land races, and folk varieties." However, the National Authority and State Boards are only required to consult these Management Committees while making a decision relating to the use of biological resources and knowledge associated therewith Local bodies have been relegated to a consultative entity, both with reference to the National Authority and State Boards, and they have been given no authority to veto decisions permitting the commercial utilisation of cultural knowledge. The actual consent of a community to commercial utilisation of its cultural property has been made irrelevant by the presumption of consent. By presuming a standing consent, the Biological Diversity Act effectively denies tribal communities any meaningful realisation of their fundamental right to culture. The Act does not recognise any traditional dispute resolution mechanism to resolve differences arising from decisions permitting the commercial utilisation of such cultural property (Dam 2006).

The Biological Diversity Act does not take into account the possibility of a dispute between the National Authority, State Boards, and tribal communities. Consequently, the Act does not recognise the availability of traditional dispute resolution mechanisms already in place in such communities. First of all, if traditional tribal legal systems are seen as evidence of culture per se, the fundamental right to culture, if it means anything to tribal life, must include the right to a traditional legal system as the dispute settlement mechanism for all conflicts between the tribes and non-tribe members and institutions. Second, if such a system is seen as a cultural "enforcement" process, the fundamental right of access to justice for the tribal communities, if it means anything, must mean the right of access to justice in the form of the customary practices of their traditional system (Dam 2006).

Due to globalisation of production systems, increase in population and due to decreased motivation amongst the local communities to conserve and protect biodiversity and associated traditional knowledge is declining. Misappropriation of biological resources and associated traditional knowledge not only violates the rights of communities who conserve them, but also adversely affects their conservation and sustainable use (Kaushik 2002).

5. CONCLUSION

There have been several cases of bio-piracy of TK from India. It includes the misappropriation of resources related Indian herbal plants such as neem, turmeric,Aswagandha, Karela, Jamun, Brinjal, etc. Many of these claims with minor modifications in methods of extraction

and processing could amount to bio-piracy of the centuries old TK of Indian system of medicine. There is also the view that the TRIPS Agreement permits patenting of organisms that encourages 'bio-piracy'. Whilst the corporations stand to make huge revenues from this process, the local communities are unrewarded and in fact face the threat in future of having to buy the products of these companies at high prices. At the national level, number of initiatives has been made to protect biodiversity associated traditional knowledge. It includes Indian Forest Act 1927, Wildlife (Protection) Act 1972, and of late The Protection of Plant Varieties and Farmers Rights Act of 2001 and Indian Bio-Diversity Act 2002 enacted to protect the biodiversity and associated resources. In India, preparation of village-wise Peoples' Biodiversity Registers (PBRs) or Community Biodiversity Registers (CBRs) for documenting all knowledge, innovations and practices has been undertaken in a few States. For preventing instances of bio-piracy in future a need was felt for developing digital databases of prior art related to herbs, which are already under public domain. TKDL is one means of giving recognition to knowledge holders. Documentation of TK may only serve a defensive purpose, namely that of preventing the patenting of this knowledge in the form in which it exists. Documentation per se, however, will not facilitate benefit sharing with the holders of traditional knowledge, unless it is backed by some kind of mechanism for protecting the knowledge. TK in India has been preserved through *smriti and shruti,* that is through the word of the teacher, which is heard and remembered, not documented, nor converted into a statutory right in favour of the teacher or his disciple. Although this form of right is enshrined in the common law principles, and recognised through jurisprudence in India, and at times even converted into a statute for a more predictable rights regime, it is not necessarily recognised outside the jurisdiction of India. So legal initiatives need to be supplemented with adequate administrative and participatory measures to protect Biodiversity Associated Traditional Knowledge in India.

End Notes

[1] Most popular definition of Biodiversity is given by UNESCO as "Biological diversity or 'biodiversity' – is defined as the diversity of all living forms at different levels of complexity: genes, species, ecosystems and even landscapes and seascapes".

[2] Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal system.

[3] The term 'traditional knowledge' has many connotations and expressions such as Indigenous Knowledge and local knowledge that are interchangeably used to refer to the matured long-standing traditionsand practices of certain regional, indigenous,or local communities which are often expressed through stories, legends, folklore,ritualssongs, and even laws.

[4] Biopiracy can be defined as, "the misappropriation and commercialization of genetic resources and traditional knowledge of rural and indigenous people".

[5] Biological Diversity Act, 2002

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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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1) Hoffmann, Steven (1990): India and the China Crisis, Oxford University Press, Delhi.
2) Bhalla and Hazell (2003): "Rural Employment and Poverty: Strategies to Elimi nate Rural Poverty within a Generation", Economic and Political Weekly, Vol.33, No.33, August 16, pp.3473-84.

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