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CONTENTS

Editorial

In the current volume, we present a collection of articles that address different issues, which include China's rise and its expansionist policies, WTO's intrusion in the health policy-making space, political economy of India's broadcasting regime, states fiscal indicators, and multi-dimensionality of development

The evolving world order post-Soviet Union presents a new power dynamics. This has seen the "rise" of an expansionist China. The hegemonic presumption of the US and the multiple challenges posed by a rising China create new polarisation in the world order. Perceptions of different nations vary – some consider China as a strategic challenge to US dominance while others perceive of mutual accommodation between the two of each other's strategic interests that would contribute towards better global governance. Against these developments, the choice of New Delhi appears to range from aligning to partnering or hedging or band-wagoning with one or the other power, argues D. Gopal.

In global trade governance WTO moves ahead unassailable. The article by Girish Kumar examines the recent decision of WTO Appellate Body against India's anti-avian influenza measures and assesses WTO's unchartered forays into the public health policy-making space of member nations. The US challenged India's import restriction at WTO against US poultry products citing anti-bird flu measures.The issue in this dispute comes under the purview of WTO Sanitary or phytosanitary (SPS) Agreement. The WTO found Indian measures inconsistent with WTO SPS Agreement.

Globalisation has made the world flat. Further, it has made nation statesreceptive to foreign investment and made diffusion of high technology possible. This is profoundly felt in broadcasting, especially sports. The penetration of new technologies, economic and legislative initiatives has changed the way consumers access informationand entertainment. The liberalisation policies of the 1990s led to the emergence of multi-national companies and huge inflow of foreign direct investment (FDI). In his paper, Relfi Paul assesses the effect of globalisation on the legislative and economic framework of Indian broadcasting industry by taking Cricket as a case study.

The paper by R. Mohan examines the revenue and expenditure trends of fifteen States of India during the period 2005-06 to 2013-14. The study classifies these states and group them into High, Middle and Low income based states based on their per capita Gross State Domestic Product (GSDP). The study concludes that the middle income States have performed better than the high and low income States in own tax effort, whereas low income States are ahead of all states vis-à-vis proportion of development expenditure to GSDP. The study further found that the quality of fiscal

deficit has improved in twelve out of fifteen States. Central grants and taxes have shown progressive trends with the degree of progressivity more in the latter. In devolution of resources to Local Self Governments (LSGs), the author concludes that only five States are ahead of State average.

The trade-off between economic growth and social welfare has been a much-debated issue. A country may show rapid progress in economic indicators but may still be facing the problems of inequitable distribution of resources and regional imbalances with regard to access to benefits. The interconnectedness of economic growth and social progress in the multidimensional development process is further explored by Nisha in her paper. She measures development using that includes demographic, economic, social, health and infrastructure indicators. A composite index was developed for various states of India using all the five indicators and then the states have been ranked on the basis of these indicators. It was observed that the states in south India have shown better progress in development as compared to the rest of India. The results further reveal that demography is an essential condition for that determines economic development of any state.

The paper on the Kerala experience in conservation of traditional medicine knowledge, is a detailed observation about the implications of the new TRIPS-based IPR regime and the attempts by the state authorities to deflect the scenario in its favour. G. Geethika has presented the topic in a rights perspective addressing the issue of collective rights and public health vis-a-vis the challenges and opportunities posed by the new IPR regime.

MOHANAN PILLAI

Editor

Toward a Strategic Triangle in the Indo-Pacific: India's Initiatives with China and the United States

D. Gopal*

Abstract

The evolving world order following the disintegration of the Soviet Union has resulted in new power dynamics which has not only diluted the NATO alliance net-working but at the same time has enhanced Russia's belligerence. Even more, it has led to the rapid "rise" of China. What seems to be shaping today's world order is the hegemonic presumption of the US and the multiple challenges posed by a rising China. Perceptions of these developments vary from those who consider that China will pose security and strategic challenge to US dominance to others who are of the view that both countries in the final analysis will accommodate each other's strategic interests that would contribute towards better global governance. Against these developments, India is thrust into uncharted waters where the choice for New Delhi appears to range from aligning to partnering or hedging or band-wagoning with one or the other powers.

Key Words: India, China, United States, Cold war

1. INTRODUCTION

The end of the Cold War gave rise to new strategic dynamics. The Western European states that worked under the strategic umbrella of the United States reoriented their policy postures and in the process strengthened the European Union framework. Moreover, disenchantment from the wars in Iraq and Afghanistan and later the so called "Arab Spring" put heavy economic pressure as well as adverse domestic public opinion in the Western countries that ultimately gave rise to a fracture in the North Atlantic Treaty Organization (NATO). Even though the United States emanated as the only super power, with the advent of the 21st Century, it witnessed the first-ever attack on its soil. This resulted in the United States getting embroiled in the wars in Afghanistan and Iraq and currently recuperating from the war fatigue. At the same time, Russia that was lured by the European Union (EU) and NATO membership could not pass the test to assimilate and forgo its own identity, became a rebel and ultimately faced sanctions and castigation. This further deepened the chasm between the US and EU mainly on account

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of EU's dependence on Russian energy supplies. China that had been re-orienting its strategic and economic policies reached to a point to establish unipolar order in the Asia-Pacific region and challenge the international order and institutions. Certainly, this posed serious multiple challenges to China's neighbours in the Asia-Pacific region and no less to the United States which since the conclusion of the Second World War had acted as a insurer of peace in the Asia-Pacific region.

Based on the above developments, new strategic calculations and dynamics have emerged not only to challenge US hegemony, but also to contain a rising China through building new alliances and partnerships. A major objective of this paper is to monitor these developments and assess the strategic challenges and options for a traditionally "non-aligned" India in the evolving geo-political construct of Indo-Pacific.

2. STRATEGIC CHALLENGES IN THE INDO- PACIFIC REGION

The United States in its 2015 *National Military Strategy* document while discussing the global strategic environment, without mentioning by name China, states: "[S]ome states…are attempting to revise key aspects of the international order and are acting in a manner that threatens our national security interests". These actions "are adding tensions to the Asia-Pacific region". Specifically, in contravention of international law, China claims "nearly the entire South China Sea". Much against public opinion seeking to resolve this issue amicably, China "has responded with aggressive land reclamation efforts that will allow it to position military forces astride vital international sea lanes". For this, the US intends to pursue an "integrated approach composed of three National Military Objectives: to deter, deny, and defeat state adversaries" and strengthen global network of allies and partners. Further, it proposes that "[if] deterrence fails…military will be capable of defeating a regional adversary in a large-scale, multi-phased campaign while denying the objectives… or imposing unacceptable costs". Therefore, the US appears to have developed phased strategic contours as to what is permissible and what may constitute crossing red lines and may be subject to "imposing unacceptable cost"(The National Military Strategy of the United States of America 2015).

In May 2015, China released its ninth Defense White Paper entitled *China's Military Strategy* which outlined a new military strategy that underlines a more "active defense posture". In this regard, the Paper highlights challenges at two levels, one at regional level referred to as "some of its offshore neighbours take provocative actions and reinforce their military presence on China's reefs and islands that they have illegally occupied" and the other of "external countries…busy meddling in South China Sea affairs". Considering the evolving strategic challenges, China envisages winning the "local wars under informatized conditions" and the external wars by expanding "offshore waters defense" with "open seas protection (Chinees Ministry of National Defense 2015)

In response to the US sketched red lines, China has demonstrated firm but conciliatory approach to pursue its strategic goals not only in its sphere of influence but also out of the region. To counterbalance both of these fronts China responded by stating: “In line with the evolving form of war and national security situation, the basic point for PMS [Preparation for Military Strategy] will be placed on winning informationized local wars, highlighting maritime military struggle and maritime PMS”.

Against this backdrop, the bilateral trade between the US and China reaching US$590 billion in 2014 also supports interdependency based on China’s holding of US$ 1.2 trillion in US Treasury bonds. Furthermore, in the post-Cold War period, no doubt, China has become the number two country in the world, it shares UN Security Council membership with the US, G20 and East Asian Summit. However, in other global institutions such as International Monetary Fund and World Bank where the US has advantage, China having been disenchanted with the activities of these institutions has initiated alternative global institutions such as Shanghai Cooperation Organization and Asian Infrastructure Investment Bank (AIIB).The popularity of the AIIB has been unprecedented, not only because major Asian countries including Australia have responded positively. In March of 2015, the United Kingdom decided to apply to join the AIIB, becoming thereby the first major Western country to do so. However, this action of the UK attracted sharp reaction from the US. A US government official expressing anguish stated: “We are wary about a trend toward constant accommodation of China, which is not the best way to engage a rising power”.In addition, transcontinental initiatives such as BRICS (Brazil, Russia, India, China and South Africa) and extending financial support to developing countries without the addendum of Western style strings such as promotion of democracy or respect for human rights have certainly placed China at the centre stage in the evolving world order.

Although the US still enjoys supremacy over China in the defence sector—in its alliance system, defence manufacturing, force deployment, strategic presence and experience in fighting wars in multi-theaters—no doubt indicates US strategic depth, but in the changing strategic and security environment, the focus seems to be shifting towards the high technological wars. In this regard, over a period of a decade or so, China has demonstrated unprecedented progress in this sector, mainly with the public display in September 2015 of the Dongfeng DF-21D, an anti-ship ballistic missile, while commemorating the 70th anniversary of Japan's surrender during the Second World War.The uniqueness of this missile is that it has a target range of over *1,450*kilometers and the projected speed of ten times faster than the speed of sound. After its launch in the orbit and re-entry in the atmosphere, it is non-traceable mainly because of its hypersonic speed that is why it is popularly called as "carrier killer". According to military experts: “This is the missile that really does potentially encroach on US capability to deploy military power close to Chinese shores” (The American Interest 2015).In a sense, the strategic advantage that the US had with its possession of multi-aircraft carriers has now

been neutralized thanks to China's development of advanced missile system. Moreover, China's quiet pursuit of war machinery adds weight to its publicly stated strategic contours such as Anti Access Area Denial (A2/AD), second island chain of defence, creation of Air Defense Identification Zone (ADIZ) and its claims over the South China Sea islands.

Yet another new dynamics that is mentioned in the 2015 Defence White Paper is in regard to Russia. Perhaps to outweigh the US alliance system and partnerships in the Indo-Pacific region, the document emphasises that "China's armed forces will further their exchanges and cooperation with the Russian military within the framework of the comprehensive strategic partnership of coordination between China and Russia, and foster a comprehensive, diverse and sustainable framework to promote military relations in more fields and at more levels" (Chinees Ministry of National Defense 2015). There appears to be a convergence of convenience in the backdrop of Russia being rebuffed by the West and the US in the recent past. Moreover, at the recently held UN General Assembly session in September 2015, Chinese President Xi Jinping in his address while critically commenting on the existing inequality among the states, expressed solidarity with the developing countries. He stated that "the law of the jungle leaves the weak at the mercy of the strong" and to come out of this perplexity "new type of international relations based on win-win cooperation" is required (Spaceship China 2015).

This poses a dilemma to the US as to when responding to a rising China, should it counter, or accommodate China. Currently, opinions diverge among the US strategists. A section opines that before China reaches a high point, "the United States might need to demonstrate its capabilities early and often as a way of undermining China's confidence in its perceived superiority".

To counter any US initiative, China's response could possibly be the twenty-four character strategy coined by Deng Xiaoping which is to "watch and observe calmly, secure our own position, behave with confidence and patience, hide our capacities and bide our time, be good at keeping a low profile, never play the leader"(Terrill 2003). This calculated orientation has its genesis in the works of Chinese strategist Sun Tzu who stated centuries back: "All warfare is based on deception". This consideration is particularly important as the Chinese leadership often makes references to the "century of humiliation", the People's Liberation Army (PLA) as heir to the ancient Chinese legacy and frequent references to battles fought in the past. Therefore, the historic strategic treatise such as *The Art of War* and the *Seven Military Classics of Ancient China* are still considered as reference points. This is further underlined in the Peoples Liberation Army's publication: *Analysis of China's Strategic Culture* which goes at length to contrast Chinese strategic culture with the Western strategic culture.

3. STRATEGIC CALCULATIONS BETWEEN US AND CHINA

While underlining the security and strategic challenges arising from China, the United States in its 2015 *National Military Strategy* document nevertheless mentions its reconciliatory approach and postures towards China by stating: "We support China's rise and encourage it to become a partner for greater international security". Similarly, China too in its 2015 *Defense White Paper* highlights its "active defense posture" through engagement:

> China's armed forces will continue to foster a new model of military relationship with the U.S. armed forces that conforms to the new model of major-country relations…, strengthen defense dialogues, exchanges and cooperation, and improve the CBM mechanism for the notification of major military activities as well as the rules of behavior for safety of air and maritime encounters, so as to strengthen mutual trust, prevent risks and manage crises (Chinees Ministry of National Defense 2015).

Even though they emphasize the apparent strategic competition between them, nevertheless they do underscore on the basis of the mutually growing economic interdependency that they are on a convergence continuum.

No doubt, China's 'rise' has been misconstrued by both the US and the other Indo-Pacific states based on exaggerated fear that China would pull the regional states into its orbit in a dependent relationship. However, during the Asian Financial Crisis of 1997-98 as well as in the Global Financial Crisis of 2008-9 China's track record proved otherwise as China instead of exploiting the crises to its advantages offered very purposive regional bail out packages devoid of conditionality elevating thereby its status as a 'good global citizen'. No less than the president of the US gave credence to the term G2 coined by C Fred Bergsten paving the way for both countries to work together to set the terms of the regional order, and towards this objective the United States should provide for the demands of a rising China.However, because of the concerns expressed by alliance partners like Japan and other major states like India in the region the US retracted somewhat from its position.

No doubt, China draws its lineage from the Middle Kingdom and tributary system and did not "accept the need to westernise itself completely, but sought to find a stable and workable blend of modernising reforms and 'Chinese characteristics'".Notwithstanding these reservations, Beijing participated in most of the international institutions and accepted international rules and norms at operational and functional levels, however at the ideational level maintained some reservations and supported a 'progressive status quo'. At the ideational level, while differing with the US and other Western values, China supported the Asian values such as traditional view of

sovereignty, non-intervention, strong government structure, communitarian system with limited individual rights, along with many of its neighbours. In a sense, China supports the Confucian approach that has its genesis in "hierarchy and band-wagoning than to balance of power". Given its historical legacy some even argue that alienating China could prove disastrously counterproductive. As Zbigniew Brzezinski states: "We cannot have that relationship if we only dictate or threaten and condemn those who disagree".

Stretching this line of argument further, others are of the view that China's rise over the last thirty years, "certainly looks peaceful compared to that of most other recent great power arrivistes"—countries such as Germany, Japan and Russia challenged the status quo by first building up military might and then "invaded and occupied their neighbours" as a demonstration of 'big power' status, whereas China without serious threat to its neighbours or the world order only supports 'progressive status quo'(Buzan 2010). Towards such an objective, Chinese leadership has time and again been making public statements underlining that it is neither a contestant nor even an aspirant for world leadership; instead it supports a democratic, multi-polar world system with multiple leadership focused on peace and development (Xi Jinping 2015).On its own volition China has indicated that it is neither in an arms race nor in military build-up with the US rather its major focus is on economic development. Most tangible example of this being that notwithstanding the US and its NATO alliance partners passing through serious GFC, instead of cashing on the weakness, China served as a saviour of the Western world as well as Japan, its arch rival. In this case, if China emerges as a world leader by default, it is more in a positive sense than as a challenger to the US hegemony or a 'fellow competitor' rather than an 'enemy competitor'. This means that "it would like to keep US leadership in place at least for the time being as a prop for its ongoing domestic development" (Buzan 2010).

According to most of the prognoses, even if in the future China intends to challenge the US or disrupt the global order, it is unlikely that it will be on a collision course or on a confrontational approach towards the US. Rather China would prefer to build a group of countries who share its vision of a multi-polar world, which among others would include influential countries like Russia, India, Brazil, France, Germany. If such polarisation does not accrue, it is more likely that China will continue with the current arrangements in the foreseeable future.

Current US posturing suggests that it would prefer strengthening its alliance system, and find new partners or even, if need be, adopt conciliatory approach to engage instead of confronting China militarily. As Zbigniew Brzezinski comments: "Engaging with China in a dialogue regarding regional stability would not only help reduce the possibility of U.S.-Chinese conflicts but also diminish the probability of miscalculation". It appears in the near future, instead of challenging China, the US could be limited to probing China such as on the issue of Taiwan, supporting Japan's anti-China overtures as

an alliance partner or as currently the US undertaking Malabar exercise with Japan and India, and its intention to enter in the territorial waters of the islands claimed by China in the South China Sea. To such probes, it appears, Beijing will have a calculated response, along the lines outlined by the Chinese leader Fan Changlong, the Vice-chairman of China's Central Military Commission (CMC) which includes scaling down its rhetoric, not use force "recklessly" for resolving disputes and propose joint defence drills with ASEAN countries to brace for unplanned and accidental military encounters at sea (The Times of India 2015). These conflicting policy pronouncements together with unpredictable foreign policy postures in recent times, critics indicate an apparent lack of "clear and coherent long-term fundamental national objectives, diplomatic philosophy and long-term or secular grand strategy" of China.

Given these uncertainties in terms of policy objectives as well as policy options on the part of both the US and China, a large number of the countries of the Indo-Pacific region themselves are at a loss in evolving an appropriate strategy to face their security challenges in their immediate neighbourhood. No wonder their options range from alliance with the US, bilateral and trilateral security arrangements among themselves and with the US and hedging, band-wagoning to reconciliation with the People's Republic of China.

4. INDIA- CHINA STRATEGIC CHALLENGES

Against these uncertainties arising out of the shifting power dynamics, what opportunities and dilemmas obtain for India to craft and chart out its mid- to long-term strategic framework that would enable New Delhi to address its anxieties and aspirations effectively is a question that is analysed in this concluding section and alongside some prognoses are proffered. There is no gainsaying that the challenges faced by India are both real and daunting. Yet India's Ministry of Defence in its Annual Report of 2014-15 emphatically stated: "Guided by the principle of building strength through the principles of strategic autonomy and self-reliance, India seeks to enhance her own capabilities and also to pursue a constructive engagement with neighbours and partner countries in the regional and global community to promote peace and stability". Crafting a coherent policy against the stated objective is by no means an easy task because it has to take into consideration a variety of factors including importantly the policy orientations and strategic equations of other big, middle and small powers vying for strategic advantage as well as competition in the shifting power dynamics.

True, China and India have existed side by side since time immemorial but mostly remained immune from each other. It was only after India's independence in 1947 and revolution in China in 1949, the two countries came closer and supported peaceful co-existence and committed to the ideal of 'Hindi-Chini-Bhai-Bhai' (Indian and Chinese are brothers). But the 1962 Chinese incursion in Indian soil led to trust-deficit

and show of force on the border. Since then both the countries have remained circumspect and suspicious of each other and have been engaged in counter-balancing each other.

If Samuel P. Huntington wasn't died, he would have definitely cited the Indo-Chinese dispute as an instance of 'clash of Civilisations'. In reality however it is more a conflict of similar ambitions, interests and geo-strategic calculations and how these clashes impact on bilateral and regional affairs. Since 1948, China has formally settled territorial and border conflicts with its twelve neighbouring nations through a concessionary strategic approach. But India remains the only exception, mainly because India is acknowledged as an opponent 'next door' that could pose a challenge to China's 'big power' aspirations. India hedges its relationship with China by engaging with East Asian powers and the US to check China's rise and maintain a strategic balance. In a sense, the security dilemma "stems from the impossibility of measuring with certainty the intentions of another state".

After eighteen rounds of discussions, the most recently held in March 2015, between the Special Representatives of India and China on the boundary dispute, the issue remains unsettled and the usual rhetoric of keeping "peace and tranquillity in the border areas" is being ceremonially echoed in media statements (Ministry of External Affairs 2015). Diplomats have also observed a change in China's stands on other geo-strategic issues. This was apparent with China's demand over the southern region of Tawang in Arunachal Pradesh. Beijing appears to have intentionally kept the boundary dispute alive to prevent India from uniting the US and to deter India from challenging China's authority in the region. Moreover, China has changed its stance on Kashmir to give legitimacy to the Pakistan Occupied Kashmir, with its aspirations to connect Gwadar Port facility in Pakistan to its western states through road and railway networks. Likewise, to give certitude to Pakistan's policy on Indian Kashmir as a 'disputed territory', China continues to finance projects in the area, including modernising the Karakoram Highway, the Bunji and Bash dams, and the Kohala and Neelam-Jhelam hydroelectric projects, all actions that "undermine China's neutrality in the India-Pakistan dispute over Kashmir".

A more basic matter that plagues relationship between the two nations is China's "all weather" relationship with Pakistan. Beijing continues to support Islamabad's military competencies and aids in supplying nuclear weapons. Some geo-strategists asserts that China's strategies vis-à-vis the Indian Ocean have also aggravated India's concerns. China's so-called 'string of pearls' policy of establishing sea ports such as Gwadar in Pakistan, Hambantota in Sri Lanka, Sittwe in Myanmar, Chittagong in Bangladesh and entering into diplomatic relations with India's neighbours in the Indian Ocean are seen as concious and calculated moves.

China's response, however, is that its aspiration is that of a "peaceful rise" and asserts that the "string of pearls" and "21st century maritime silk road" are merely proposed to open door for further trade with India, which, in recent years, has overreached a substantial US$70 billion. Despite this, China's overall growth and 'muscling up' in its bilateral relations with India work as a threat to New Delhi, a question of just how it is to react to China's growing power.

Taking note of rising Chinese hawkish posturing as well as the strengthening of friendship between China and Pakistan, Indian military strategic principles are developing to a "two-front war" and "cold start" against a collective crisis created by both China and Pakistan. Moreover, to oppose China's motorised high altitude regions and missiles placed towards India, the Indian Ministry of Defence took some tangible strategies, such as ratification of a five-year plan with a budget to the tune of US$13 billion. To resolve infrastructural insufficiencies and to set up a more credible deterrence, India decided in November 2011 to deploy a regiment of *BrahMos* surface-to-surface supersonic cruise missiles in Arunachal Pradesh, "making it India's first offensive tactical missile development against China"(Asian Defence News 2012).

Even if only to display its 'big power' credentials, India upgraded its deterrence potential by test-firing the *Agni*-V and VI intercontinental ballistic missiles, which, with a range of over 5,000 kilometres, have capacity to reach major Chinese cities. These actions depict a definite change in India's conventional method of 'dissuasion' to one of credible deterrence. India has also taken concrete move to rejuvenate its navy, by financing for the acquisition of new submarines and aircraft carriers and turning a net security render in the Indian Ocean region.

Overall, what is arising in the Asian terrain is a "China threat" perception, mostly due to China's own claims and actions over land and naval circuit. These trends also indicate that Asia-Pacific countries are more likely to "balance China instead of accepting Chinese primacy in a hierarchical tributary state system". This provides a chance for India to improve its 'Act East' strategic alliances with 'China-wary' countries (Danielle Rajendram 2014). Acknowledging India's overall advancement and rising strategic posturing, Asia's small and medium powers recognize leverage in India to equalise a growing China. In this regard, most ASEAN countries consider India's maritime progress as a promising advancement. This posturing creates India's relation with South-East Asia somewhat smoother than that experienced by China.

In response to China's hegemonic perceptions in the Pacific zone, nations such as Australia, Japan, Vietnam and the US have acknowledged the significance of India's rising influence in the South Asian and Indian Ocean terrain, while India has acknowledged its capability to work more closely with these nations, creating a convergence of interests giving emergence to bilateral strategic relationships. Security

alliances between India and major Pacific nations are not only linked to address question of terrorism, piracy and protecting sea lines of communication, but also to help shape the changing balance of power in the terrain. Just as China established the so-called "string of pearls", in a sense, India has evolved its own parallel strategy: the so-called "necklace of diamonds" (People's Daily Online 2009).

Commenting on India's signing of security deals and its inclination towards the US presence in the area, a Chinese expert, Dai Bing, asserts: "For the foreseeable future … a 'cold war' between the two countries is increasingly likely…"(Dai Bing 2010). In the process, "New Delhi's perspective of China's strategic encirclement of India, and Beijing's fears of Indian attempts to limit China's influence in South and Southeast Asia, as well as its power projection into the Indian Ocean, override their formulaic statements of shared interests as partners in strengthening a multipolar world"

5. INDIA'S STRATEGIC BALANCING ROLE

After the disintegration of the USSR, India taking cognizance of the new geo-strategic landscape followed a pragmatic approach by altering its non-aligned policy to set up a new relationship with the US. Nevertheless, it was only after its 1998 nuclear experiment that India legitimised its explosion as an act to discourage the 'China threat', as well as to exhibit dissatisfaction with China's aid to Pakistan's nuclear programme, that a broader regional strategic framework with the US was sought. The US, in its attempt to counter a growing China and finding limited gain in assisting Pakistan after withdrawal from Afghanistan, found it suitable to claim India as an partner and use chances that an emerging India extended. This began with the US government's switch on its approach on Kashmir and "advised Islamabad to forget about history and see ahead".

India respond to the US gestures by granting assistance for its battle against international terrorism, particularly after the 9/11 attacks. The changing understanding of each country towards the other indicated a positive change in relationship, taking down blockades that had already existed. As against China's growth, the US acknowledged India's role in the terrain, acting as a buffer and Indian Ocean chokepoint for China's aspirations, further prescribed an elevated role for India in the Indo-Pacific zone. Increasing proximity further resulted in signing a Defence Framework Agreement in 2005 and Civil Nuclear Cooperation Agreement in 2008. These two landmark agreements seek to grant aid to India's civilian nuclear programme, despite opposition from China, shifted the regional power dynamics (Rice 2000). A 10-year military agreement further reinforced the relationship and unlocked new perspectives that included technology transfer, arms production, and missile defence partnership, eventually resulting in India being granted status of "a responsible state with advanced nuclear technology", giving India *de-facto* recognition as a nuclear weapons state.

The election of US President Barack Obama brought further impetus to the bilateral relationship, couched in phrases that portrayed India as an "indispensable power" and a "leader in Asia". This development generated the first round of the India-US strategic dialogue in 2009, in a sense "institutionalising" formal bilateral deliberations on China. Obama also made two visits to India, unprecedented for a US president, and promised US support to India's membership of the UN Security Council, non-proliferation regimes, export of advanced military technology and armaments to India. Considering the strengthening allainces with India, Obama stated that: "We support India's role as a regional provider of security and its expanded participation in critical regional institutions. We see a strategic convergence with India's "Act East" policy and our continued implementation of the rebalance to Asia and the Pacific".

Even though the 1998 nuclear experiment by India and Pakistan evoked international criticism and sanctions, China categorically censured only India, citing that it was "infuriated and deeply hurt, not as much by the tests themselves" but by the justification that India build China as a "threat". The *People's Daily* noted that the US "needs to rely on India to restrict China. India needs to show its value to the United States by flexing its muscle toward China so that it could gain U.S. military support and help raise its international status" (He Zude and Wei Fang 2011).According to these Chinese sources, earlier China "tended to dismiss India as a peer competitor…Beijing is now paying increasing attention to India's drive for a great power status through diplomatic initiatives and a military buildup" (Yuan 2007).

India's advancement of credible deterrence, enhancing alliances with the US, and hedging towards the Asia-Pacific terrain has resulted in China moderating its tone and acknowledging New Delhi's elevated position. Beijing now apparently considers that its diplomatic campaign to alienate New Delhi is only pushing India into the US base. Acknowledging this, Chinese strategists then opted a reconciliatory attitude by engaging India directly and dissuading it from uniting the US, Japan, Vietnam or any other 'China-wary' country. Moreover, while showing rapprochement with India, China alarmed India to be cautious of the ill-conceived US rhetoric of US-India alliance, as democratic and natural partner, to "foil Western conspiracies aimed at dividing China and India". To avert such division, Chinese diplomats coaxed India to be a partner architect in sculpting of the 21st Century as the Asian Century.

6. CONCLUSION

Analysing the circumstances in which India is placed, as one observer says: "New Delhi will persist with its policy of engaging with both China and the US, without antagonizing either side". From a positive perspective for India, in the short-term, it seems this to be a favourable time, when it can ride both tides (China and the US) while navigating the channels extracting the most from both dominant leaders while still acting

the role of a regional equaliser. However, in the medium-to-long-term, India will need to emerge with its own security and strategic principles, so that through this transparency, it will be possible to pursue its interests with like-minded countries.

References

Bennett, Jonah (2015): "Did China's New Assassin Mace Missile Just Make Aircraft Carriers as Obsolete as Battleships?", *The Daily Caller*, 9 April, http://dailycaller.com/2015/09/04/did-chinas-new-assassin-mace-missile-just-make-aircraft-carriers-as-obsolete-as-battleships/#ixzz3obVliSrc, accessed on 4 October 2015.

Bing, Dai (2010): "India building a security barrier against China", *China.org.cn*, 8 February, http://www.china.org.cn/opinion/2010-02/08/content_19387164.htm, accessed 28 March 2015.

Brewster, David (2014): *India's Ocean: The story of India's bid for regional leadership*, Routledge, London.

Brzezinski, Zbigniew (2011): "As China Rises, A new US Strategy: We Should Embrace Russia, japan and South Korea as We Seek to Manage the Rise of China", *The Wall Street Journal*, 14 December, http://www.wsj.com/articles/SB10001424052970203413304 577088881349304486, accessed 30 September 2015.

Buzan, Barry (2010): "China in International Society: Is 'Peaceful Rise' Possible?", *The Chinese Journal of International Politics*, vol. 3, p. 13

Durden, Tyler (2015): "US Attacks 'Closest Ally' UK for 'Constant Accommodation' With China", *Global Research*, 29 March, http://www.globalresearch.ca/us-attacks-closest-ally-uk-for-constant-accommodation-with-china/5439249, accessed 15 October 2015.

Fayyaz, Shabana (1997): "Kashmir Conflict: US Post-Cold War Perspective", *Pakistan Journal of American Studies*, no. 15, p. 76.

Fernandes, George (1998): "China is enemy no 1: George", *The Indian Express*, 4 May, http://expressindia.indianexpress.com/ie/daily/19980504/12450024.html, accessed 20 June 2015.

Fisher Jr , Richard D and James Hardy (2015): "China previews new ballistic missiles in practices for 3 September parade", *Jane's Defence Weekly (IHS)*, 30 August, http://www.janes.com/article/53896/china-previews-new-ballistic-missiles-in-practices-for-3-september-parade, accessed 15 October 2015.

Frankel, Francine R (2011): "The breakout of China-India strategic rivalry in Asia and the Indian Ocean", *Journal of International Affairs*, vol. 64, no. 2, pp. 1-2.

Garver, John W (2002): "The China-India-U.S. triangle: Strategic relations in the Post-Cold War era", *NBR Analysis*, vol. 13, no. 5, pp. 1-2.

Hongyi, Hongi (2009): "Explaining Chinese Solutions to Territorial Disputes with Neighbour States", *Chinese Journal of International Politics*, vol. 2, no. 4, pp. 487-523.

Huntington, Samuel P (1993): "The Clash of Civilizations?", *Foreign Affairs*, vol. 72, no. 3, pp. 22-49.

Jervis, Robert (1978): "Cooperation under the Security Dilemma", *World Politics*, vol. 30, no. 2, pp. 167-214.

Kampf, David (2009): "Moving the G-2 Forward", *Foreign Policy Association*, 14 May, http://www.fpa.org/topics_info2414/topics_info_show.htm?doc_id=912530, accessed 5 October 2015.

Kang, David (2003): "Hierarchy, Balancing and Empirical Puzzles in Asian International Relations", *International Security*, vol. 28, no. 3, pp. 165-80.

Kellerhals Jr, Merle David (2010): "India an indispensable partner, US officials say", 1 June,www.america.gov/st/peacesecenglish/2010/June/20100601090431dmslahrellek0.7037622.html ,accessed 20 November 2014.

Mahnken, Thomas G (2011): *Secrecy & Stratagem: Understanding Chinese Strategic Culture*, Lowy Institute for International Policy, Sydney, p. 10.

Malik, Mohan (2012): "India Balances China", *Asian Politics and Policy*, vol. 4, no. 3, p. 346.

Masood, Salman and Declan Walsh (2015): "Xi Jinping Plans to Fund Pakistan", *The New York Times*, 21 April, http://www.nytimes.com/2015/04/22/world/asia/xi-jinping-plans-to-fund-pakistan.html?_r=0, accessed 5 June 2015.

Mathai, Ranjan (2011): "India's foreign secretary", quoted in Hu Yinan, China, India resume military dialogue, *China Daily*, 8 December, http://usa.chinadaily.com.cn/china/2011-12/08/content_14230300.htm, accessed 17 May 2014.

Ministry of Defence (2014): *Annual Report 2014-2015*, Government of India, New Delhi, p. 2, http://www.mod.nic.in/writereaddata/AR1415.pdf, accessed 15 September 2015.

Ministry of External Affairs (2015): *18th Round of Talks between the Special Representatives of India and China on the Boundary Question*, New Delhi, http://mea.gov.in/pressreleases.htm?dtl/25002/18th+Round+of+Talks+between+the+Special+Representatives+of+India+and+China+on+the+Boundary+Question, accessed 6 May 2015.

Ministry of National Defence (2015): *China's Military Strategy*, The People's Republic of China, Beijing, 26 May, http://eng.mod.gov.cn/Press/2015-05/26/content_4586805_6. htm, accessed 5 October 2015.

Rajendram, Danielle (2014): *India's new Asia-Pacific strategy: Modi acts East*, Lowy Institute for International Policy, Sydney.

Rice, Condoleezza (2000): "Promoting the National Interest", *Foreign Affairs*, vol. 79, no. 1, January-February, p. 56.

Terrill, Ross (2003): *The New Chinese Empire*, Basic Books, New York, p. 256.

Tzu, Sun and Samuel. B. Griffith (1980): *The Art of War, trans*, Oxford University Press, Oxford.

Yinhong, Shi (2002): *The Rising China: Essential Disposition, Secular Grand Strategy, and Current Prime Problems*, Sasakawa Peace Foundation USA, Washington, DC,12 February, https://www.spf.org/publication/upload/178474a17de.pdf, accessed 1 October 2015.

Yuan, Jing-dong (2007): "The Dragon and the Elephant: Chinese-Indian Relations in the 21st Century", *The Washington Quarterly*, vol. 30, no. 3, p. 132.

Yuzhen, Gong (2002): *Analysis of China's Strategic Culture*, Military Science Press, Beijing.

Zude, He and Wei Fang (2011): "India's increasing troop may go nowhere", *People's Daily*, 15 November, http://english.peopledaily.com.cn/90777/7644825.html, accessed 30 November 2014.

Health and Trade: WTO's Shocker to India's Anti-bird Flu Measures

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Abstract

The Article examines WTO's forays into the public health policy-making space of member nations. The Terrestrial Code of World Organization for Animal Health (OIE) forms an integral part of the regulatory reference system established by the WTO. The Terrestrial Code aims to improve animal health and welfare worldwide and to ensure the sanitary safety of international trade in animals. Member states should either follow OIE standards or could maintain a higher standard than that of OIE, if the standard is supported by scientific evidence contained in SPS Agreement. The US challenged India's import restriction at WTO against US poultry products citing anti bird flu measures. The WTO found Indian measures inconsistent with WTO SPS Agreement. In this article recent decision of WTO Appellate Body in India's anti-avian influenza measures is evaluated.

Key Words: WTO, OIE Terrestrial Code, SPS Agreement, Poultry, anti-avian influenza, bird flu

1. INTRODUCTION

The global poultry market has always been plagued by imposition of import restrictions. India, a minor importer, maintains non-tariff barriers on poultry due to its high sensitivity to bird flu. In 2008, Badminton Association of India (BAI) forced the national badminton camp in Goa to be called off due to the shuttlecock shortage. The shortage was due to India's import ban on shuttlecock from China. India imports nearly 10,000 dozen shuttlecocks made by a Japanese firm, Yonex, but manufactured in China. Despite BAI's stiff protests, Indian government authorities stuck firm on the ban on shuttlecocks made in China, which was in place since February 2004 and was avian flu-prompted. The World Organisation for Animal Health (OIE) warned that the feather follicles of birds might contain the H5N1 virus and this could be a potential source of infection. Further, the droppings of infected birds could contain large amounts of virus that were remaining infective for at least three months (The Hindu 2008).[1] The ban was extended to poultry imports too. About 60 percent of India's one-billion-plus people

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dwell in rural areas close to livestock. This is common in many other parts of Asia and raising the dangers of the bird flu virus infecting humanity. India's worst ever bird flu was declared in 2008 in West Bengal, where the H5N1 virus had been detected. The authorities culled more than 3.4 million birds in the state. The World Health Organization said that this outbreak was India's most serious outbreak yet (Majumdar 2008). Given the unprecedented diversity and geographical distribution of the viruses of avian influenza circulating, the WHO warned that the resulting pandemic could be worse than the 2009 swine flu epidemic, which killed over 284,000 (Jayalakshmi 2015).

Since its first detection in India and Pakistan in 2006, South Asia experienced regular occurrences of H5N1 avian influenza virus. As the land-based poultry in thickly populated regions in South Asia are conducive for continued co-circulation of various subclades of the H5N1 virus, the risk of evolution of pandemic H5N1 strains is very high. Indian authorities believe that the virus could have originated from Bangladesh, where bird flu spread to 37 of the country's 64 districts. The H5N1 virus was first detected in Pakistan in 2006. Pakistan's first human case resulted in death. In its four outbreaks of avian influenza since 2006, India has not reported any human infections of the H5N1 bird flu virus. Culling was the only available option to contain the disease. But poverty–stricken farmers, whose sole income depended on these birds abhorred culling and smuggled out the birds from infected districts. Recently, authorities in Kerala ordered culling of about 150,000 ducks and poultry after lab tests confirmed bird flu strains in dead birds (BBC 2014). Similarly, Telangana government culled as many as 1.45 lakh birds after identifying H5N1 Avian Influenza outbreak (Rohit 2015). Although these outbreaks appear to be isolated sporadic incidents, their frequent occurrences and widespread nature suggests that areas of India are endemically infected (FAO 2012).The first outbreak of avian flu in India came from the village of Nawapur, in Nandurbar district of Maharashtra, on February 19, 2006. At least 253,000 birds and 587,000 eggs were destroyed within five days then(Chandra 2013).The avian influenza threat during early 2006 in India had resulted in losses of over INR 2200 crores to the Indian poultry industry (Mohan et.al, n.d). From the end of 2003 to March this year, India has had over 90 HPAI H5N1 outbreaks.

Year	*Place*	*No. of birds culled*
2006	Maharashtra	10.44 Lakh
2007	East Imphal (Manipur)	3.39 Lakh
2008	West Bengal	45.62 Lakh
2008	Tripura	19 Lakh
2008	Assam	5.09 Lakh
2008	West Bengal	2.01 Lakh
2009	Sikkim	4000

2010	West Bengal	1.56 Lakh
2011	Agartala (Nagaland)	0.21 Lakh
2011	Assam	15409
2011	West Bengal	48581
2012	Odisha	0.81 Lakh
2012	Meghalaya	0.07 Lakh
2012	Tripura	0.13 Lakh
2012	Karnataka	0.33 Lakh
2013	Bihar	0.06 Lakh
2014	Chhattisgarh	0.31 Lakh
2014	Kerala	2.7 Lakh

Source: Department of Animal Husbandry, Dairying& Fisheries, 2015

2. AVIAN INFLUENZA, OIE AND THE TERRESTRIAL CODE

In the late 19th century, a highly contagious disease decimated poultry stocks in Europe. This disease was commonly known as "foul plague", which is currently called Highly Pathogenic Avian Influenza ("HPAI"). It has continued to appear in various countries around the world causing death primarily to poultry such as chicken and turkeys (WTO 2013).[2]

In the WTO case both India and US agree that the relevant international standard in this dispute is the Terrestrial Code. The aim of the Terrestrial Code is to contribute to improve animal health and welfare worldwide and to ensure the sanitary safety of international trade in animals. The Terrestrial Code publishes measures as a result of consensus among the veterinary authorities of the World Organization for Animal Health (OIE) Member Countries. The WTO SPS Agreement recognizes "the standards, guidelines and recommendations developed under the auspices of the OIE" as the international standards for animal health and zoo noses. The OIE, an intergovernmental organization, was established on 25 January 1924, in response to the need to fight animal diseases at a global level and improve animal health worldwide (OIE 2003). A total of 178 countries, including the United States and India, are members of this organization. One of the missions of the OIE is the establishment of health standards for international trade in animals and animal products. Annex A(3)(b) of the SPS Agreement stipulates that "for animal health and zoo noses, the standards, guidelines and recommendations developed under the auspices of the International Office of Epizootics". The SPS Agreement is aimed at establishing a multilateral framework of rules and disciplines for promoting trade and minimize the negative effects of trade restrictive health measures

without scientific evidence. WTO stipulates that restrictive measures should be based on the OIE's international standards, guidelines and recommendations. If they do not exist, or if the importing government applies more stringent measures, such measures should be based on a risk analysis of the potential health risks. The Terrestrial Code, which serves as the regulatory reference system recognized by the WTO, describes guidelines for conducting scientific assessment. These standards, which are based on the latest available scientific evidence, prescribe health measures. For international trade in terrestrial animals and terrestrial animal products, veterinary authorities of trading countries should use these measures to avert the transfer of agents pathogenic to terrestrial animals and/or humans.

One such set of standards contained in the Terrestrial Code is related to Avian Influenza. India has been notifying its Avian Influenza (AI) measures to the WTO Secretariat since 2002. 'Avian flu' or 'bird flu', is defined by the WHO as "an infectious viral disease of birds (especially wild water fowl such as ducks and geese), often causing no apparent signs of illness". According to the WHO, AI viruses may spread to domestic poultry and cause large-scale outbreaks of serious disease. The issue in this dispute are India's measures related to AI that prohibit the importation of various agricultural products from those countries reporting 'notifiable avian influenza'[NAI]into India. The aim of the Terrestrial Code is "to set international standards for the improvement of terrestrial animal health and welfare and veterinary public health worldwide". The OIE requires its members to notify the OIE of any occurrence of HPAI and of certain types of LPAI in their territories. The United States contends that India's measures are not based on the Terrestrial Code. The United States argues that a defining characteristic of the Terrestrial Code is that it distinguishes between HPNAI and LPNAI with respect to trade; but India's measures deny such a distinction and impose a complete ban for certain products regardless of whether the country is reporting HPNAI and LPNAI (Para.7.164). India could maintain a higher standard than that of OIE, if the standard is supported by scientific evidence. Further, 'they should be based on a scientific risk analysis conducted in accordance with OIE recommendations'. However, Indian AI measures in this case lack a risk assessment consistent with OIE standards.

All the member nations are to notify to OIE about AI. The Terrestrial Code defines NAI as "an infection of poultry caused by any influenza A virus of the H5 or H7 subtypes or by any AI virus with an intravenous pathogenicity index (IVPI) greater than 1.2 (or as an alternative at least 75 percent mortality)".[3]This covers both high pathogenic notifiable avian influenza (HPNAI) and low pathogenicity notifiable avian influenza (LPNAI). Since 2004 the United States has not notified to the OIE an outbreak of HPAI in the United States but since January 2006, it has notified occurrences of LPAI in poultry. But from the end of 2003 to 12 March 2013, India notified 95 outbreaks of HPAI (subtype H5N1) in poultry in India to the OIE. India never notified LPAI, however.

3. THE WTO PROVISIONS

The WTO attempts to promote liberalization of international trade. The SPS agreement in consonance with its preamble outlines that its fundamental goal is to establish a multilateral framework of rules that minimize the negative impact of sanitary and phytosanitary measures on trade. Nevertheless, the SPS Agreement emphasizes that its disciplines are not intended to prevent WTO Members from adopting or enforcing measures necessary to protect human, animal, or plant life or health. Neither the Members are required to change their appropriate level of SPS protection. But it is a "delicate and carefully negotiated balance … between the shared, but sometimes competing, interests of promoting international trade and of protecting the life and health of human beings" (WTO 1998). ."Members have the right to take sanitary and phytosanitary measures necessary for the protection of human, animal or plant life or health, provided that such measures are not inconsistent with the provisions of this Agreement" (Article 2.1). The SPS Agreement also explicitly provides that members "shall ensure that their sanitary and phytosanitary measures do not arbitrarily or unjustifiably discriminate between Members where identical or similar conditions prevail, including between their own territory and that of other Members. Sanitary and phytosanitary measures shall not be applied in a manner which would constitute a disguised restriction on international trade" (Article 2.3)."Members shall accept the sanitary or phytosanitary measures of other Members as equivalent, even if these measures differ from their own or from those used by other Members trading in the same product, if the exporting Member objectively demonstrates to the importing Member that its measures achieve the importing Member's appropriate level of sanitary or phytosanitary protection. For this purpose, reasonable access shall be given, upon request, to the importing Member for inspection, testing and other relevant procedures" (Article 4.2).

The role of science is explicit in SPS Agreement, as all the measures require scientific justification for their existence, should be based on scientific principles, and should maintain them with sufficient scientific evidence. What constitute all these becomes the domain of WTO jurisprudence. The centrality of this science-based provision of the SPS Agreement revolves around Article 2.2, which reads: "Members shall ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, is based on scientific principles and is not maintained without sufficient scientific evidence…" (WTO). This implies that two conditions need to be met: measures should be based on scientific principles and sufficient scientific evidence – the 'principle' denotes a general rule or law which requires 'methodological soundness and rigour in the process through which the evidence is collected and assessed'. The elements should have 'objectivity, peer review, falsifiability (hypotheses can be tested and previous results verified or refuted), and impartiality' (Gruszczynski 2010). The word 'scientific' means "having or appearing

to have an exact, objective, factual, systematic or methodological basis and relating to, or exhibiting the methods or principles of science" (WTO 1998).

If a restrictive measure is having 'scientific justification' and is premised upon a methodology provided under Article 5 entitled "Assessment of risk and determination of the appropriate level of sanitary or phytosanitary Protection" a member could "introduce or maintain sanitary or phytosanitary measures which result in a higher level of sanitary or phytosanitary protection than would be achieved by measures based on the relevant international standards, guidelines or recommendations". The methodology, which constitutes the core of the SPS agreement is reproduced below:

1. Members shall ensure that their sanitary or phytosanitary measures are based on an assessment, as appropriate to the circumstances, of the risks to human, animal or plant life or health, taking into account risk assessment techniques developed by the relevant international organizations.

2. In the assessment of risks, Members shall take into account available scientific evidence; relevant processes and production methods; relevant inspection, sampling and testing methods; prevalence of specific diseases or pests; existence of pest — or disease — free areas; relevant ecological and environmental conditions; and quarantine or other treatment.

3. In assessing the risk to animal or plant life or health and determining the measure to be applied for achieving the appropriate level of sanitary or phytosanitary protection from such risk, Members shall take into account as relevant economic factors: the potential damage in terms of loss of production or sales in the event of the entry, establishment or spread of a pest or disease; the costs of control or eradication in the territory of the importing Member; and the relative cost-effectiveness of alternative approaches to limiting risks.

4. Members should, when determining the appropriate level of sanitary or phytosanitary protection, take into account the objective of minimizing negative trade effects.

5. With the objective of achieving consistency in the application of the concept of appropriate level of sanitary or phytosanitary protection against risks to human life or health, or to animal and plant life or health, each Member shall avoid arbitrary or unjustifiable distinctions in the levels it considers to be appropriate in different situations, if such distinctions result in discrimination or a disguised restriction on international trade. Members shall cooperate in the Committee, in accordance with paragraphs 1, 2 and 3 of Article 12, to develop guidelines to further the practical implementation of this provision. In developing the guidelines, the Committee

shall take into account all relevant factors, including the exceptional character of human health risks to which people voluntarily expose themselves.

6. Without prejudice to paragraph 2 of Article 3, when establishing or maintaining sanitary or phytosanitary measures to achieve the appropriate level of sanitary or phytosanitary protection, Members shall ensure that such measures are not more trade-restrictive than required to achieve their appropriate level of sanitary or phytosanitary protection, taking into account technical and economic feasibility.

7. In cases where relevant scientific evidence is insufficient, a Member may provisionally adopt sanitary or phytosanitary measures on the basis of available pertinent information, including that from the relevant international organizations as well as from sanitary or phytosanitary measures applied by other Members. In such circumstances, Members shall seek to obtain the additional information necessary for a more objective assessment of risk and review the sanitary or phytosanitary measure accordingly within a reasonable period of time.

8. When a Member has reason to believe that a specific sanitary or phytosanitary measure introduced or maintained by another Member is constraining, or has the potential to constrain, its exports and the measure is not based on the relevant international standards, guidelines or recommendations, or such standards, guidelines or recommendations do not exist, an explanation of the reasons for such sanitary or phytosanitary measure may be requested and shall be provided by the Member maintaining the measure" (Article 5).

The issue in this dispute comes under the purview of WTO Sanitary or phytosanitary (SPS) Agreement. WTO stipulates that these are measures, which conform to international standards, guidelines or recommendations and shall be deemed to be necessary to protect human, animal or plant life or health. The SPS Agreement intends to harmonize sanitary and phytosanitary measures among Members to facilitate trade. Members' domestic measures need to be based on international standards, guidelines or recommendations. Nevertheless, they could introduce or maintain SPS measures, which result in a higher level of protection than the relevant international standards, guidelines or recommendations. For this, there should be a scientific justification on the basis of an examination and evaluation of available scientific information (Article 3 SPS).

The Appellate Body in *EC – Hormones,* explains the interplay of these three elements. Accordingly, a Member could decide to promulgate an SPS measure that conforms to an international standard (Article 3.2 of the SPS Agreement*)* or a Member could choose to establish an SPS measure that is based on the existing relevant international standard, guideline or recommendation (Article 3.1 of the SPS Agreement*)* or a Member could decide to set for itself a level of protection different from that

implicit in the international standard. The Member's appropriate level of protection may be higher than that implied in the international standard. The Member has the right to determine its own appropriate level of sanitary protection. There is no 'general rule – exception' relationship between these three relevant paragraphs of Article 3 and these three alternative settings are equally available to WTO Members.

4. MEASURES IN DISPUTE

India maintains its AI measures through, *inter alia*, the following legal instruments: the Livestock Act that was enacted for the regulation of the import live-stock which is liable to be affected by infectious or contagious disorders, and 'S.O.' that generally refers to statutory order' and was notified to the WTO SPS Committee.[4]

Paragraph (1) of S.O. 1663(E) provides:

(i) the import into India from all countries in view of Notifiable Avian Influenza (both Highly Pathogenic Notifiable Avian Influenza and Low Pathogenic Notifiable Avian Influenza), of wild birds except those reared and bred in captivity;

(ii) the import into India from the countries reporting Notifiable Avian Influenza (both Highly Pathogenic Notifiable Avian Influenza and Low Pathogenic Notifiable Avian Influenza), the following livestock products, namely:

(a) domestic and wild birds (including poultry and captive birds);

(b) day old chicks, ducks, turkeys, and other newly hatched avian species;

(c) un-processed meat and meat products from Avian species, including domesticated, wild birds and poultry;

(d) hatching eggs;

(e) egg and egg products (except Specific Pathogen Free eggs);

(f) un-processed feathers;

(g) live pigs;

(h) pathological material and biological products from birds;

(i) products of animal origin (from birds) intended for use in animal feeding or for agricultural or industrial use; and (j) semen of domestic and wild birds including poultry:

"Provided that the Central Government may allow the import of processed poultry meat after satisfactory conformity assessment of the exporting country".

The US contended that these AI measures are inconsistent with WTO SPS Agreement as they are not based upon scientific principles or relevant international standards, maintained without sufficient scientific evidence, arbitrarily or unjustifiably discriminate between Members where similar conditions prevail, trade-restrictive, hence constitutes a 'disguised restriction on international trade' (Panel *Poultry* 2015).

In response to the Panel's questions, the OIE confirmed that all standards for avian influenza relating to products are in Chapter 10.4 of the Terrestrial Code and the intention is to discourage Member countries from imposing bans on trade in poultry. The Panel found two additional categories included in S.O.1663 (E) –'live pigs' and 'pathological material and biological products from birds'. Accordingly, due to the absence of relevant international standard, for these two categories, SPS Articles 5.1, 5.2 and 5.6 could be applied.

The US contended that these India's AI measures are inconsistent with WTO SPS Agreement, because it is not in consonance with international standards set by OIE Terrestrial Code to which India is also a party, and the sanitary measures India took are trade restrictive. The United States further argued that the Terrestrial Code does not recommend imposing a ban on imports on account of LPNAI. To India setting its own level of protection is the prerogative of an importing nation, but the OIE only recommends, "sanitary conditions which should be fulfilled by the consignment and which should further be attested to by the veterinary authority of the exporting country". India further argues that if a country notifies HPAI and LPAI in poultry, the importing country can impose immediate "ban on trade in poultry commodities depending on the condition of entry they have selected based on the level of protection they have deemed appropriate". The OIE recommendations contain two risk mitigation conditions- the product must originate in a free country and the export consignment is additionally accompanied by a veterinary certificate certifying that the export consignment has been rendered risk free through the application of additional control measures. These two conditions are required to ensure optimal level of animal health security. According to India, insisting that the origin of a product be ignored and that India apply only the control measures or veterinary certificate requirements will not ensure an optimal level of health security as there is always a danger of disease introduction in the absence of the application of both risk mitigation conditions. India argues that its AI measures conform to the Terrestrial Code and hence WTO-consistent.[5]

The United States interprets that eggs for human consumption can be imported from either an HPNAI or NAI-free country. For both NAI and HPNAI-free territories, the Code simply requires a veterinary certificate, that certain control measures were in fact applied. The LPAI viruses do not transmit to the inside of poultry eggs. Only surface of eggs need to be sanitized because that may be the only potential vehicle that might have any virus on it. Besides, India's *country-wide application* of its AI-based import ban

is not based on the Terrestrial Code, which encourages principles of 'regionalization', i.e. limiting the territory to which a measure need be applied Besides, "[a]s LPAI viruses do not replicate to poultry meat, the recommendation rightly focuses on ensuring that the source bird has not been in a HPNAI territory or at least outside it for the relevant incubation period (21 days)". According to the United States, "[i]f so, and the bird is slaughtered appropriately with the proper inspection, then a certificate attesting as much is sufficient to allow trade". But to India importing eggs for human consumption from a NAI-free country, zone or compartment or from a HPNAI-free country, zone or compartment, according to the level of protection it deems appropriate is the prerogative of the importing nation.

OIE insisted that the Terrestrial Code does not support imposition of import prohibitions with respect to poultry products notwithstanding a finding of infection with an LPAI virus. Zoning and compartmentalisation are promoted by the OIE, both to prevent and control diseases and to allow safe trade from countries not free. Due to the role of wild birds in disseminating AI infection, compartmentalisation based on biosecurity can be applied as a trade facilitating measure. Even if avian influenza were to occur in the country, the sub population within the compartment would remain free, and therefore eligible for trade. India's AI measures vide S.O. makes a blanket prohibition of relevant products from countries reporting NAI, without allowing importation from NAI or HPNAI- free zones or compartments and hence amount to a "fundamental departure" from the Terrestrial Code.[579]

Scientific foundation of SPS measures

The relationship between three provisions – Articles 2.2, 5.1 and 5.2 of the SPS Agreement – constitute the scientific foundation of SPS measures and when an SPS measure is not based on a risk assessment conducted according to the requirements in Article 5.1 and 5.2, "this measure can be presumed, more generally, not to be based on scientific principles or to be maintained without sufficient scientific evidence". Articles 5.1 and 5.2 concern with risk assessments, and Article 2.2 refers to scientific principles and sufficient scientific evidence. These are reproduced below:

> 2.2. Members shall ensure that any sanitary or phytosanitary measure is applied only to the extent necessary to protect human, animal or plant life or health, is based on scientific principles and is not maintained without sufficient scientific evidence, except as provided for in paragraph 7 of Article 5.

> 5.1. Members shall ensure that their sanitary or phytosanitary measures are based on an assessment, as appropriate to the circumstances, of the risks to human, animal or

> plant life or health, taking into account risk assessment techniques developed by the relevant international organizations.
>
> 5.2. In the assessment of risks, Members shall take into account available scientific evidence; relevant processes and production methods; relevant inspection, sampling and testing methods; prevalence of specific diseases or pests; existence of pest — or disease — free areas; relevant ecological and environmental conditions; and quarantine or other treatment." (SPS Agreement).

Risk assessment is "a process characterized by systematic, disciplined and objective enquiry and analysis, that is, a mode of studying and sorting out facts and opinions". The definition of "risk assessment" in Annex A (4) of the SPS Agreement reads:

> "*Risk assessment* – The evaluation of the likelihood of entry, establishment or spread of a pest or disease within the territory of an importing Member according to the sanitary or phytosanitary measures which might be applied, and of the associated potential biological and economic consequences; or the evaluation of the potential for adverse effects on human or animal health arising from the presence of additives, contaminants, toxins or disease-causing organisms in food, beverages or feedstuffs".

The United States argues that Article 5.1 requires risk assessment techniques developed by OIE, the relevant international organizations, was not taken into account by India before imposing restrictions to contain AI. Indian assertion at the June 2010 SPS Committee meeting, that its measures were based on a detailed risk analysis for the importation of animal and animal products by a committee of experts, based on the existing global situation of the disease, existing scientific literature and the OIE standards could not be acceptable. The only document that was available was the Summary Document is entitled "India's Risk Assessment on Avian Influenza for imposing ban on import of poultry and poultry products from Avian Influenza positive countries". India contended that when there are no international standards or if the domestic sanitary measure adopts a higher level of protection, then the WTO Member in question is required to justify its domestic sanitary measure through a risk assessment. Moreover, India asserts that the scientific evidence it submitted to justify import ban poultry and eggs from LPNAI countries establish the risk in trade from these commodities. This fulfils the requirement of not maintaining its measure without sufficient scientific evidence. India need not conduct a separate risk assessment in this instance. To US the Indian document unstructured, repetitive, and is poorly supported by reference to scientific literature and hence India's risk assessment fails to evaluate the likelihood of the risks arising. Since India submitted that this document was a 'brief summary of scientific material' was provided 'informally and in good faith only to the

United States and the European Communities' the Panel did not regard it as India's risk assessment and hence WTO inconsistent. This led the Panel also supported the US' claim that India's absence of a domestic surveillance regime to detecting the disease in its own poultry scientifically, amounts to arbitrary or unjustifiable discrimination between members where identical or similar conditions prevail. The position that Indian measures *prima facie* constituted a case of nullification or impairment of benefits accruing to the United States under SPS agreement, was upheld by the Appellate Body (WTO 2015).

5. IMPLICATIONS

Poultry production is world's largest meat industry. Eighty six million tons of broiler meat are produced globally. The United States, trailing only Brazil, is the second-leading exporter of poultry meat (broiler and turkey) in the world. These two countries, together account for nearly 70% of all world poultry meat exports (Johnson 2015). But bird flu affects birds and poses a threat to US exports. Further, the U.S. accounts for about one-third of all world poultry trade, virtually no U.S. exports go to EU countries because of EU ban on imports of U.S. poultry treated with certain pathogen reduction treatments (PRTs).[6]This puts the US government in heavy pressure from its domestic producers to find external markets for its poultry products. India is the third largest broiler producer and second largest egg producer (IATP 2015).About four lakh farmers are engaged in poultry farming and the domestic market size is estimated at around Rs.50,000 crores. The WTO ruling enables the US to dump cheaper US chicken legs in the Indian market. Chicken legs are considered a scrap in the US, which it wants to dump in the Indian market at a throw away price. However, chicken legs are sold at a premium in India and the market share of chicken legs is around 40 per cent of the $9.37 billion (Rs 60,000 crore) Indian market (Business Line 2014).While fresh chicken in retail sells for Rs 180 a kg, the chicken legs go for about Rs 240 a kg. Chicken drumsticks from the US come in at around Rs50-60 per kg (WTO 2015). Removal of import restrictions by India could give a $300-million boost to American poultry exports.

End Notes

[1]The crisis is worse in Indonesia, once the world's no.1 badminton power, and could not retain the title due to its ban on imported poultry products from China. The position was later occupied by China.

[2]The HN subtypes are generally classified as belonging to one of two groups, according to their ability to cause disease, *i.e.*, pathogenicity, *in chickens*: (i) Highly Pathogenic Avian Influenza (HPAI) and (ii) Low Pathogenic Avian Influenza.HPAI viruses have either H protein 5 or 7 *and are highly virulent for chickens* (75 percent of higher

mortality).LPAI viruses encompass all other types of avian influenza, including those that have H protein 5 or 7 and are not highly virulent.

[3] See Terrestrial Code (21st edition), Article 10.4.1.2.

[4]The Live-Stock Importation Act 1898 (9 of 1898) (Livestock Act)published on 12 August 1898, as amended by the Live-Stock Importation (Amendment) Act 2001 (No. 28 of 2001) (Livestock Amendment Act), and published in the Gazette of India on 29 August 2001; and the statutory order S.O. 1663(E) is in fact in the nature of a notification, which was notified to the SPS Committee on 11 October 2011.

[5]The Terrestrial Code is reviewed on an annual basis; new editions are adopted by the OIE members each year in May, and become publicly available in June or July of the same year. The Panel opined that given the facts in this dispute, three editions were relevant – the 20th edition (2011), which was the edition of the Terrestrial Code in force at the time of adoption of S.O. 1663(E) on 19 July 2011; the 21st edition, which was in force at the time of the establishment of this Panel on 25 June 2012; and the 22nd edition that was in force during the deliberations of this Panel. The Panel considered the 22nd edition that adds new articles of the Terrestrial Code or to revise existing articles in the light of advances in veterinary science.

[6] PRTs are antimicrobial rinses that have been approved for use by the U.S. Department of Agriculture (USDA) in poultry production to reduce the amount of microbes on meat. The US poultry industry some times producing a product that is so contaminated with bacteria that the carcasses are rinsed in chlorine to prevent serious illness from eating the meat. The US case against EU measures at WTO is still pending. On 16 January 2009, the United States requested consultations with the EC on certain measures concerning the production and marketing of poultry, and in particular not allowing the use of substances other than water for the treatment of poultry carcasses. DS 389 – Poultry Antimicrobial Treatment (AMT).

References

BBC (2014): "India: Kerala orders culling over bird flu fears", *BBC,* November 25.

Chandra, Neetu (2013): "Bird flu alert: Delhi-NCR on watch after major outbreak in Chhattisgarh, Bihar", *India Today,* August 18.

Epps, Tracey (2008): *International Trade and Health Protection: A Critical Assessment of the WTO's SPS Agreement,* Edward Elgar, Cheltenham, U K.

FAO (2012): *H5N1 Global Overview,* Issue 31, January to March.

Fraiberg, Jeremy and Michael .J. Trebilcock (1998): "Risk Regulation: Technocratic and Democratic Tools for Regulatory Reform", *43 McGill Law Journal*.

Gruszczynski, Lukasz (2010): *Regulating Health and Environmental Risks under WTO Law: A Critical Analysis of the SPS Agreement*, Oxford University Press, Oxford.

Jayalakshmi K (2015): "WHO warns of pandemics worse than 2009 swine flu outbreak", *International Business Times*, March 1.

Johnson, Renée (2015): "U.S.-EU Poultry Dispute on the Use of Pathogen Reduction Treatments (PRTs)", *Congressional Research Service*, January 15.

Majumdar (2008): "Ban on shuttlecock imports to stay", *The Hindu*, February 11.

Majumdar, Bappa (2008): "Indian state bans poultry trade to curb bird flu", *Reuters*, February 5.

Mohan, Usha , N. Viswanadham and Prachi Trikha (2009): "Impact of Avian Influenza in the Indian Poultry Industry: A Supply Chain Risk Perspective", *Int. J. Logistics Systems and Management*, Vol. x, No. x, xxxx.

Peel, Jacqueline (2004): "Risk Regulation under the WTO SPS Agreement: Science as an International Normative Yardstick?", *Jean Monnet Working Paper No 2002.*

Rohit, P. S (2015): "Avian flu outbreak triggers alert in Telangana", *The Hindu*, April 15.

Scott, Joanne (2000): "On Kith and Kine (and Crustaceans): Trade and Environment in the EU and WTO", in Joseph H.H Weiler (ed), *The EU, the WTO and the NAFTA—Towards a Common Law of International Trade,* Oxford University Press, Oxford.

Tandon, Rahul (2008): "West Bengal battles with bird flu", *BBC News*, 20 Jan.

WTO Appellate Body (2015): "India – Measures Concerning The Importation of Certain Agricultural Products", *WTO Doc.*, AB-2015-2, WT/DS430/AB/R.

WTO Appellate Body (1998): "European Communities — Measures Concerning Meat and Meat Products", *WTO Doc., DS48.*

WTO (2013): "India – Measures Concerning the Importation of Certain Agricultural Products from the United States (DS430)", *U.S First Written Submission,* April 10.

Political Economy of Broadcasting Industry in India: A case study of Cricket

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Abstract

Broadcasting is an effective way through which people around the world can be unified on the groundwork that they would regular beneficiaries of a specific message (Thussu 2005). The impacts of television ought further bolstering in a chance to be perceived similarly as hosting the capacity will change social, budgetary and political situations in its places of propogation and beyond. The penetration of new technologies, economic and legislative initiatives are changing the way consumers access a wide variety of content covering information, entertainment, and sports, among others. The liberalisation policies of the 1990s led to the emergence of multi-national corporations (MNCs), which in turn led to huge amounts of foreign direct investment (FDI) inflow into the country. Recently, the business saw merging in the structure from claiming acquisitions and vital alliances amongst different broadcasters, substance aggregators also distributors which aides to expanding those aggregate income for the upstream players'. (Girish & Relfi 2009). Due to the development of various technologies from time to time, t[1]he broadcasting industry has had significant growth in the last few years. Likewise the advertise structure in the broadcasting varies from aggressive in content formation with focus previously, substance amassed. At the same time, regulations related to competition and Intellectual Property (IP) law became more complex during this period. This paper assesses the legislative and economic framework of Indian broadcasting industry and examines how cricket is important in this sector.

Keywords: Broadcasting industry, Cricket, India, Political economy

1. BRIEF OVERVIEW

The broadcasting industry forms the backbone of expanding access and dissemination of various works in today's society. In fact, this gains more currency since India is the world's third-largest broadcasting market. Therefore, to ensure that such a strong medium of information dissemination is not misused, a strong and unbiased regulatory framework is essential. Opponents of this stand say exclusive broadcasting rights endows the producers/creators with rights permitting them to solely exploit the product and that is anti-competitive. They also pointsthat this acts against market

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forces. Whereas the supporter of 'exclusivity' claims that it promotes art and culture by giving broadcasters their due. Broadcasting constitutes a significant portion of the world of mass communication which plays an important role in procuring majority of the data and advertising diverse interpretations of it (Thussu 2005). As a result, it can be utilized to exert social control; making social union serves different interests. Access to information, freedom of expression, pluralism and cultural diversity are the basic objectives of media. Naturally, these values receive wide acceptance by broadcasting organisations. Broadcasting, traditionally conceptualised as a 'public good', involves the transmission of information to the widest possible population of people. Since the effort and cost expended to bring broadcasting to one person is the same as if it were provided to many; whether it is disseminated to one person or a million, the content does not diminish in any way.

The opening up of Indian economy promptly in the 1990s enabled the passage from claiming private broadcasters in place of public broadcaster such as Doordershan. The globalisation policies and more innovative development prompted solid rivalry for news and all entertainment channels bringing about considerable development in territorial channels. The expanding development of satellite TV and Direct-to-Home (DTH) proceeds with making broadcasting as the most favored medium around advertisers (CCI 2013). Broadcasters needed aid in keeping tabs once web and portable networking started building on their income. In broadcasting services, there are three main stakeholders which are the broadcasters, distributors of TV channels and viewers/subscribers. Broadcasters provide channels; distributors establish their networks and subscribers pay a price for viewing TV channels. The digitalisation process is rapidly progressing and offers transparency and better viewing quality, though the issue of subscriber choice was not adequately addressed. The benefits of digitalisation such as choice of selecting channels on a-la-carte basis and availability of multi-media services never reached the subscribers. Further, broadcasters have continued to bundle channels and push them to maximum number of subscribers, as they offer huge discounts on bouquets. Since the main sources of revenue for broadcasters are advertisements and subscription fees, the existing tariff orders have led to skewed revenues which they earned from advertisements, resulting in lack of investment in niche and not-so-popular channels, which in turn led to a lack of choice for subscribers.

2. LEGISLATIVE FRAMEWORK

Modern technologies and Foreign Direct Investment (FDI) inflow led the broadcasting sector to become site of contention among different interest groups such as producers, content creators, broadcasters, government and public. A paramount part about this tussle is the legitimate regulation about both existing and what's more developing innovations. This section of the article dives through those existing administrative foundations furthermore legitimate skeleton that applies on different show advances that need aid at present being used. Broadcasting regulations in the country involve huge administrative

control, various agencies, govern different aspects of drafting, implementing and enforcing these policies and legislation. That service from Ministry of Information and Broadcasting (MIB) may be that summit physique answerable for shaping also administering those rules, relating to information and broadcasting. The Telecom Regulatory Authority of India (TRAI) under Department of Telecommunications manages broadcasting furthermore link administrations clinched in India. The administration monopoly, which might have been broad until those development for satellite TV in the 1990s, could make followed will a century old Indian Telegraph Act 1885. The go about states that the administration for India needs the benefit for establishing, managing, and working telegraphs within the country (Sec 4(1)).

i. Prasar Bharati (Broadcasting Corporation of India) Act, 1990

It was introduced in 1979 and it was lapsed after the Janata Party government came into power following the end of national emergency. The triumph of the national front government in 1989 saw the restoration of the Prasar Bharati bill clinched alongside an altered structure. This envisages shaping about a self-sufficient broadcasting corporation that might oversee Doordarshan and All India Radio (AIR), thereby discharging every power previously held by MIB. These elementary obligations for this corporation enables in growing public broadcasting services to inform, educate and also stimulate people in general and to guarantee a balanced development of broadcasting through television and radio.

ii. The Cable Networks Act, 1995

The purpose of the Cable Networks Act was to introduce firm regulations in the cable market ie, in the distribution of content carrying signal. The objective of the Act was on the basis that the cable TV constituted a cultural invasion as the programmes were mostly Western and unknown to Indian culture and way of life (CAN 1995). It declared that the lack of proper law and regulation had resulted in undesirable content and advertisements were being shown to Indian viewers without any proper censorship.

iii. The Information Technology Act, 2000

This act aimed at dealing different issues that emerged from the utilization of internet in commercial transactions, and will help in achieving this new technology under that extent of the law (Adukia 2007). Despite the fact that those go about might have been not meant during managing the show segment it will bear a sway on the content of show administration suppliers who utilize the web to broadcast material. Also, for climbing quite a few broadcasters utilizing internet should broadcast contents, it gesture need turned into applicable of the broadcast sector.

iv. Communications Convergence Bill, 2000

The government then envisaged setting up the Competition Commission of India (CCI) through the Communications Convergence Bill 2000. According to this government's distinguishment that conventional networking what's more correspondence laws didn't enough manage advancements in Information Technology and its choice to open the telecom sector prompted the proposition should make a single regulatory authority.

v. Indian Copyright Act, 1957

Indian Copyright Act, 1957, the rules made there under and the International Copyright Order 1999 govern copyright and neighboring rights in India. Over the years, this Act has been amended five times – in 1983, 1984, 1992, 1999 and in 2012. By virtue of Section 78 of the Act, the Central Government is empowered to make rules through notifications in the Official Gazette, for carrying out the objectives set out in this Act. According to the provisions of the Act, a copyright office was established under the control of a Registrar of Copyrights, who was to act under the superintendence and direction of the Central Government (Sec. 9, Copyright Act 1957). The principal function of this office was to maintain a register of copyrights containing the names or titles of works, the names and addresses of authors (Sec. 44, Copyright Act 1957), etc.

Now, the scope and definition of copyright was set out thus: it included the exclusive right to communicate works through radio and television broadcasting; cinematographic films were given a separate copyright; the term of copyright protection was extended from 23 to 50 years, which was again extended to 60 years in 1992; and the term of copyright for all categories of works was also specified (Sec.22, Copyright Act 1957). Provisions relating to assignment of ownership and licensing of copyrights, including compulsory licensing in certain circumstances, rights of broadcasting organisations, international copyrights, definition of infringement of copyrights, exceptions to the exclusive rights conferred upon authors or acts that do not constitute infringement, special rights of authors, civil and criminal remedies against infringement and remedies against groundless threats or legal proceedings were also introduced.

a. Amendment in 2012

Indian Copyright Act, 1957 has been significantly amended in May 2012, both houses of the Parliament placed their seal on the Copyright Amendment Bill. While extending the rights of performers and broadcasting organisations, the amendment laid great force on eliminating unequal treatment meted out to lyricists and music composers of copyrighted works incorporated in cinematographic films. Such treatment was the result of the contractual practice prevalent in the Indian entertainment industry. According to industry practice, lyricists and music composers assigned all rights in the work to the producer of the film for a one-time lump sum payment. Thus, lyricists and

music composers enjoyed no further right to any royalty accruing from their works even if the work was utilised in mediums other than the cinematographic film.

This anomaly was later set right by adding a provision to Section 17, which provided that clauses (b) and (c) of the Section will have no impact on the right of the author of the work incorporated in the cinematographic film. This move now gave rights to the lyricists and music composers. This amendment ensured that users of copyrighted material receive access to protected materials and their fair use rights are duly protected and enforced. To meet this requirement, the amendment act broadened the scope of statutory and compulsory licensing provisions and empowered the broadcasting organisations to broadcast any prior published literary, musical work and sound recording by giving a notice to the copyright owner and paying royalty at the rates prescribed by the Copyright Board. The amendments also recognised the need to ensure access to reading material for differently-abled people through the introduction of Section 52(1). This Section is broadly worded; permitting conversion of any work in any accessible format by any person or organisation till such reproduction is aimed at benefiting persons with disability.

The Copyright Amendment Act has also tried to the Copyright Act in conformity with technological advances and concomitant international developments and so Section 65A and 65 B were added to promote digital rights management. These provisions aim to protect the rights of the copyright owners in the digital domain. Further, Section 52(b) and 52(c) Have been included in order to ensure that the digital advances are useful for the users, do not unreasonably restrict access and to protect Internet Service Providers (ISPs). These provisions protect ISPs from copyright infringement liability in case of transient and incidental storage of the work for the purpose of providing access (Pandey 2012).

b. Broadcasting Reproduction Rights

The original copyright act of 1957 did not envisage any protection being extended to broadcasting signals. This came about later in 1983 through the amendment, which inserted the definition of ‘broadcast’. Section 2 defines ‘broadcast’ which means communication to the public: (i) by any means of wireless diffusion, whether in any one or more of the forms of signs, sounds or visual images; or (ii) by wire, including a re-broadcast. The rights of a broadcasting organisation vis-à-vis broadcasts are dealt with under Section 37. Following an amendment in 1994, the act was substituted with a new section providing for ‘Broadcasting Reproduction Rights’. The amended section deals with a methodology under which the broadcaster is given the right to reproduce a broadcast made already. The Broadcasting Reproduction Rights thus, include:

(a) reproducing the broadcast;

(b) causing the broadcast to be heard or seen by the public on payment of a fee;

(c) making any sound recording or visual recording of the broadcast;

(d) making any reproduction, sound recording or visual recording where the initial recording was unauthorised;

(e) selling, hiring or offering for sale or hire to the public any such sound or visual recording.

Following the operation of Section 37, the performance of any act as under (a) to (e) shall require a licence of the broadcasting organisation or else the act shall be treated as violation of copyright. However, exceptions to the same have been provided in Section 39 of the Indian Copyright Act. These exceptions can be broadly categorised as the broadcast being; for private use,for purposes of bona fide training or research, for reporting of current events, and general exceptions as provided under Section 52 of the act. Further, Section 39A extends the general provisions under the act to broadcasting rights. Thus, one shall note that in many aspects Broadcast Reproduction Rights are treated at par with copyright (Narayanan 2002). However, the enunciation of broadcast rights have not been so widely spread in India as has been abroad. Nevertheless there are some judicial decisions which have brought forth the rightful position of law in this regard.

Indian Copyright Act 1957 originally used the term 'radio-diffusion', which was defined by Section 2 as 'radio diffusion includes communication to the public by any means of wireless diffusion whether in the form of sounds or visual images or both'. The Copyright (Amendment) Act 1983 substituted the definition of 'broadcast' for the definition of 'radio-diffusion'. According to Section 2, 'communication to the public' means making any work available for being seen or heard or otherwise enjoyed by the public directly or by any means of display or diffusion other than by issuing copies of such work regardless of whether any member of the public actually sees, hears or otherwise enjoys the work so made available.

It has further been clarified by way of an explanation that communication through satellite or cable or any other manner means simultaneous communication to more than one household or place of residence, including residential rooms of any hotel or hostels. The definition thus addresses the issue of satellite broadcasting and cable television. It is not worth that any communication to the public by wire has been included to mean broadcast. This means that transmission of sounds or visual images by cable television service is also covered by the definition of broadcast. Unlike the UK Copyright, Designs and Patents Act, there is no separate definition for cable programmes or cable programme services in the Copyright Act, 1957. However, the Cable Television Networks

(Regulation) Act 1995 defines 'cable service' to mean the transmission by cable of programmes, including re-transmission by cable of any broadcast television signals. 'Cable Television Network' is defined as system consisting of a set of closed transmission paths and associated signal generation, control and distribution equipment, designed to provide cable service for reception by multiple subscribers. Further, 'programme' is defined by the Act to mean any television broadcast and includes (i) exhibition of films, features, dramas, advertisement and serials through video cassette recorder or video cassette players; and (ii) any audio or visual or audio-visual live performance or presentation (Cable Television Regulation Act 1995).

vi. The Sports Broadcasting Signals Act, 2007

India is a cricket-crazy country. Therefore, if any international cricket match is being played anywhere in the world where India is participating and the match is being broadcast only by commercial broadcasters, it could gain the ire of the government. Naturally, the government had to do something about it. Thus was born the Sports Broadcasting Signals Act, 2007. The Act aimed 'at providing free-to-air programmes to the millions of listeners and viewers, and access to sports events of national interest through compulsory sharing of sports broadcasting signals with Prasar Bharati' (Mehta & Nalin 2010). The Act received assent from the President of India on the 19 March, 2007 and it was brought into operation in 2005, retrospectively, as was provided in the Act.

According to, Section 3, every owner or holder of content rights and provider of services should share with Prasar Bharati the broadcasting content of nationally important sports events, if these are to be broadcasted live in India on any cable, DTH network or on radio. Content that is thus shared should be allowed to be re-transmitted by Prasar Bharati's terrestrial and DTH networks. Besides, sharing of such content should be done without advertisements (ESPN V Prasar Bharati & Others 2013). Here, the court has considered the constitutionality of Rule 5 of the Sports Broadcast Signals Rules, 2007 in relation to the present provisions of Section 3 of the Act. The court stated that the broadcasters are under the obligation to share live broadcasting signals of such sports events with Prasar Bharati without inclusion of advertisements, either put in place by the broadcast service provider or by the content rights holder.

Similarly, there are certain conditions on which such sharing should be done, including sharing of advertisement revenue between Prasar Bharati and the owner or holder of content rights. Such sharing of revenue should be done in the ratio of 75:25 for television coverage and 50:50 for radio broadcast. The Central Government is vested with the rights to penalise any of the parties acting in contravention to the Act. The provisions regarding this are specified in Section 4 of Chapter 2 of the Act. Thus, besides imposing the penalties, the Central Government can also suspend the license and withdraw permission/registrations granted in case of breach of terms or conditions of Section 3 of the Act. Penalties can go right up to Rs 1 crore. However, in consonance with the principles of natural

justice, before penalising any of the parties involved, they should be afforded a reasonable opportunity to clarify their stand.

vii. Freedom of speech vis-a-vis the right to broadcast

In the landmark judgment in Government of India vs. Cricket Association of Bengal, the Supreme Court impressively widened the scope about straight on opportunity of discourse right to freedom of speech and expression when it held that the government has no monopoly of electronic media (Article 19 (1a). An ordinary citizen has the right to broadcast programmes to audience/viewers through television or radio. However, the court included that the government could force confinements once such a right best on the fact specified over clause (2) of Article 19 also not with respect to whatever available ground. Statement (2) for article 19 does not notice state monopoly on electronic media. The European court of Human Rights has also taken a comparable perspective that such as press, and broadcasting is secured toward article 10 of the convention guaranteeing the right to freedom of expression. Extensively broadcasting freedom comprise off our facets like, freedom of the broadcaster, option of the viewers, right of the citizens, and right to establish private broadcasting companies (Mehta & Nalin 2010).

3. BROADCASTING REPRODUCTION RIGHTS IN INDIA

Originally the Indian Copyright Act of 1957 did not include any protection being extended to broadcasting signals. This came about later in 1983 through an Amendment, which inserted the definition of broadcast. According to Section 2 of the Copyright Act, broadcast means communication to the public: by any methods including wireless diffusion. The rights of broadcasting organisations vis-à-vis broadcasters are dealt with under Section 37, Following an amendment in 1994 ‘the act might have been substituted with another area giving to ‘Broadcasters re-production Rights’. The amended section deals with a methodology under which the broadcaster can be provided the right to re-produce. Emulating those operation of area 37 ‘the performance of whatever go about as under (a) to (e) ought to oblige a license of the broadcasting company or else act shall be treated as violation of copyright’. However, exceptions of the same have been given in section 39 of the Indian Copyright Act. These exceptions can be widely categorized as the broadcast being; private use, purposes of research and training, reporting news events and general exceptions as given in Section 52 of the Act.

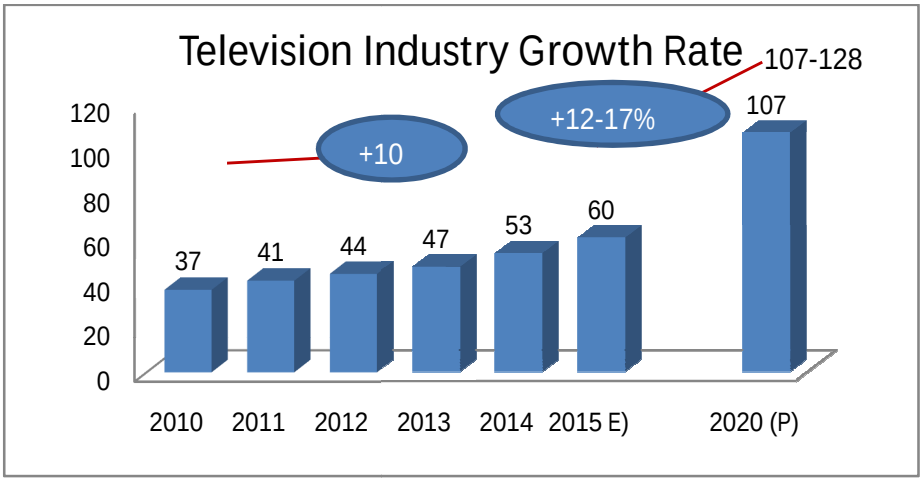
Thus, one shall note that in many aspects broadcast reproduction rights are treated at par with copyright. However, the enunciation of broadcast rights have not been so widely spread in India as it has been abroad. Nevertheless, there are some judicial decisions which have brought forth the rightful position of law in this regard. In India, the copyright act 1957 originally used the term wireless-diffusion, which might have been defined by section 2 as radio diffusion whether in the form of sounds or images or both. The copyright (Amendment) Act 1983 substituted those definitions of

broadcast for the definition for radio-diffusion. Broadcast is defined to mean communication to public by remote diffusion, if clinched alongside any one alternately a greater amount of the manifestations of signs, resonances alternately visual images; alternately by wire also incorporates a re-broadcast (Adukia 2007).

4. ECONOMICS OF BROADCASTING

India ranks at the third position of global TV market after China and the US, where the television reaches 65% of households in the country, (Figure,1). Those medium may be likewise prominent with advertisers, speaking to 44. 5% of the overall Indian market share. Hindi territorial all entertainment channels rule the television broadcasting industry. They make up 52% of total viewership (Mint 2009). Universal broadcasters bring in length been display in this segment, much appreciated should administrative standards. Every year, new television channels sprout across genres, including entertainment, news, movies, also corner genres, for example, such that lifestyle, children what's more infotainment.

Figure 1

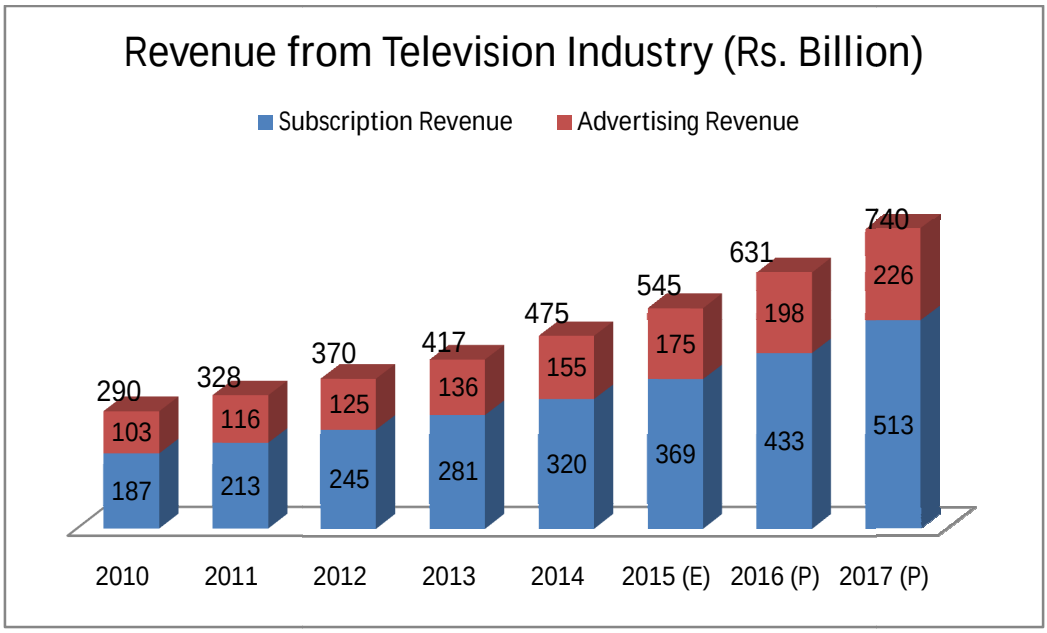


Source: FICCI-KPMG Indian Media and Entertainment Report 2015.

As of July 2014, a total of798 television channels were on air, including 397 news channels. This growth in the number of channels, predominantly entertainment channels, news channels, chiefly in the entertainment channels and news genres, and thank to low entry barriers, is widening the audience fragmentation. The intense competition among these channels may be bringing about ventures

advancing under separated content and diversification into niche and territorial channels.India's Rs.475 billion broadcast industry remains in a sweet spot (Figure, 2). The dual revenue stream of advertising and subscription is expected to benefit from a resurgent economy as well as improved structural dynamics that helped anchor steady growth in the number of TV households and higher digital pay-TV penetration.

Figure 2



Source: Business Standard: 2015

At an average family of4 members, TV is gaining more than 35 million potential viewers each year. Television will continue to offer the highest reach to advertisers, relative to any other media. As a result, advertisements will continue to remain the major revenue stream for broadcasters, while an increase in affiliate sales will help stabilise the business and drive profitability. Since its inception, the DTH sector has made cumulative investments of Rs 275 billion and has been primarily responsible for driving penetration of digital pay-TV. With a base of more than 41 million active subscribers, DTH is poised to benefit from greater economies of scale. In 2014, the DTH industry reported an average EBITDA of Rs 38 per sub per month, with margins at 16 per cent. Moreover, two of the leading operators, Dish TV and Airtel Digital, have already started generating positive free cash flow. The free to air TV market in India can be safely described as multi-faceted. The Government-led Doordashan, offers 21 channels and which are being broadcasted on 11 different Indian dialects.

However, it is more popular in the rural and semi-rural regions. Contrasted with this, the most popular FTA channels are those offered by three greatest networking houses in India: Star India, Zee Entertainment and Viacom18 Media Pvt Ltd. The commercial broadcasting channels the table those three most popular content genres over India: narrative entertainment, bollywood movies and reality shows. India also exports television programmes to neighboring nations with extensive sub-continental diaspora.

Till the last decade of the 20th century, the national waves were controlled by the government. As a result, the broadcaster's signals covered the whole country. Thus, there was strong national and territorial bias. Foreign broadcasters were kept out of the country. Steps taken to allow them to operate in the country were negated, citing breach of national security and sovereignty. Since the 1990s, there have been two developments in the TV segment, which has recalibrated its relationship with the state. First, decentralisation played yeoman's role in the development of TV at an infra-national level. Globally, local and regional TV broadcasting systems have come into being. The development of regional TV networks has always resulted in political underpinnings. These networks emerged out of the existing national – and public – broadcasting structures. This evolution has many facades to it, including the expansion of the multinational broadcasting companies.

FDI has been a main vector of globalisation in the past and has possibly grown in importance over the past decade. The MNCs have provided a massive infusion of investment and technology and under certain conditions, have played a major role in the economic transformation of many developing countries. In the present liberalised global economic environment, economies of various countries are closely inter-linked and inter-dependent. Currently, the FDI in carriage services is set at 100%, of which 49% can be brought in through the automatic route and the rest has to go through the Government route. New sectoral caps &entry routes in broadcasting sector FDI policy has also been amended as given under:

Sector/Activity	**New Cap and Route (2015)**
(1) Setting up Teleports or up-linking HUBs (2) Direct-to-Home; (3) Cable Networks (Multi System Operators) (4) Mobile Television (5) Head-end in the Sky Broadcasting Service (HITS)	100 per cent up to 49 per cent - automatic route beyond 49 per cent - under government route
Cable Networks (Other Multi System Operators not undertaking upgradation of networks towards digitalisation and Local Cable Providers.	100 per cent up to 49 per cent - automatic route beyond 49 per cent- under government route
Programme Content Services	100 per cent up to 49 per cent - automatic route beyond 49 per cent - under government route
Terrestrial Broadcasting including FM Radio	49 per cent - up-linking of news and government route
Up-linking of News & Government route Current Affairs Channels	49 per cent - up-linking of news and government route
Up-linking of Non-News & Current Affairs Channels	100 per cent automatic route
Down-linking of Channels	100 per cent automatic route

Source: Ministry of Information and Broadcasting, Govt. of India

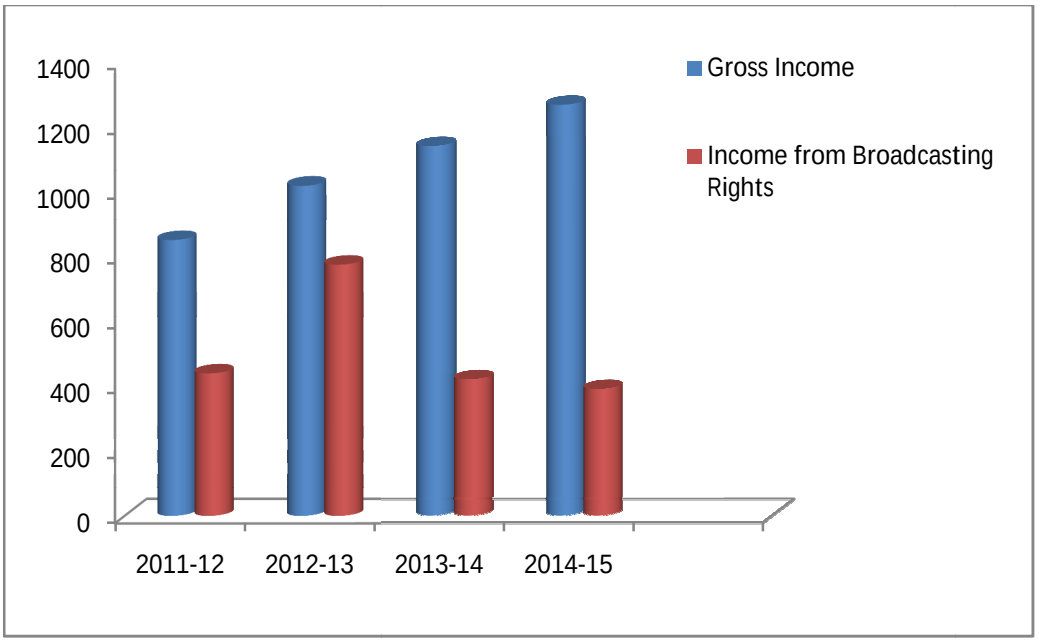
5. CRICKET: A CASE STUDY

Cricket holds the numero uno position in India as far as popularity and revenue generation are concerned. Cricket mania is equally distributed through the length and breadth of the country - a phenomenon that leaves any onlooker dumbfounded. From the swankiest residential areas to sleepy hamlets in the hinterlands of India, one can find boys swinging cricket bats in the evenings. One of the reasons for this great interest is the many cricketing stars that this love for the game has resulted. On its 68-year of historical backdrop following independence, one of the greatest international successes for India has been the Cricket World Cup in 1983 which Indians even now hold dear with

heart. Ensuing appreciable performance done other World Tournaments have included extraordinarily of the game's popularity in India. Cricket in India is governed by BCCI which was structured in 1928 as a society.

The key income driver to significant professional sports is now TV and in many respects, this applies to cricket more than the majority of major sports. Cricket has relied more heavily on broadcast income than most other major sports in terms of the proportion of revenues brought into the sport events. Those income scene transformed dramatically by going for $1bn deals for the Indian Premier League (IPL) and the Champions League for twenty 20 format cricket.Sports media rights have been rising globally. BCCI gets a majority of its money through that. The gross income of BCCI is Rs. 849, 1017, 1139 and 1266 during the period of 2011 to 2015. The income received from the broadcasting rights during this period is Rs. 438,774,419 and 389 respectively during these years.

Figure.3: Income of BCCI 2011-2015

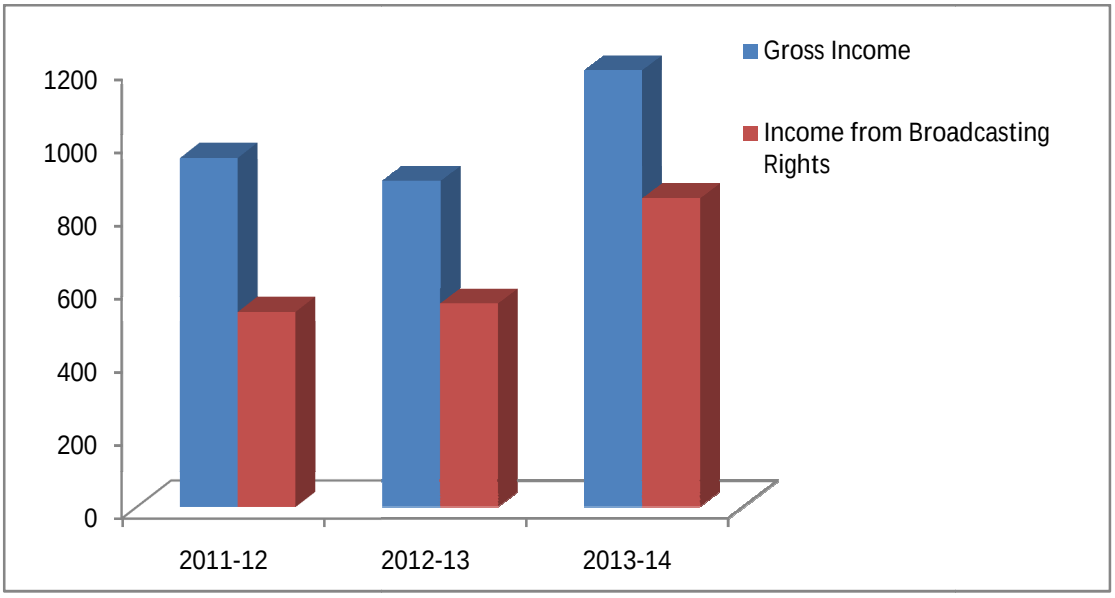


Source: BCCI Annual Report 2012, 2013 and 2014

IPL is one of the most economically sounded brands in the World esteemed toward US$3.7 billion. Interest in other sports has also expanded since India facilitated the 2010 Commonwealth Games, challenging those who thought that it will remain single-sport particular nation. This momentum, joined with youngsters and more an efficient affinity with use on leisure, presents the sports industry with a number of development opportunities. The IPL generates its income from sale

of broadcasting rights, sponsorships, licensing and promoting and ticketing (BCCI, 2012-14). The league has also increased its revenue through 'sale of rights for portable TV/mobile, live streaming, gaming and theoretical exhibition.The gross income from IPL was Rs. 956, 892 and 1194 during the period of 2011 to 2014. The income received from the broadcasting rights during this period was Rs. 533,556 and 844.

Figure.4: Income from IPL (Rs.in Cr.)



Source: BCCI Annual Report 2012, 2013 and 2014

In India, sports broadcast genre is currently a three-horse race dominated by Star Sports, ZEEL-owned Taj Television and Multi Screen Media's Sony Six, while Neo Sports Broadcast is at the bottom of the heap. The rise of Star India to the top of the league has come due to its game-changing strategies in the last one year. Marking its entry into the sports broadcasting space, Rupert Murdoch-promoted News Corp's Indian subsidiary acquired the BCCI's media rights for a whopping Rs 38.51 billion. The BCCI rights acquisition was a sign of bigger things to come. In June 2012, News Corp bought out ESPN's stake in the equal joint venture company ESPN Star Sports, for $335 million. Following the acquisition, the Indian arm of the sportscaster, ESPN, became a part of Star India. A transnational media order came into being. It is remapping media spaces bringing in new media practices, flows and products across the world. India, a comparatively strong soft power with rich cultural legacy, has an increasing number of media companies which also have strong overseas presence. For instance, the Indian television market witnessed exponential growth, attracted by the

large and increasingly affluent urban middle classes and even attracted multinational broadcasting conglomerates into India. The success of news and sports channels in India is attributed to market-driven strategies, which include the skilful localisation of content and aggressive business practices. This also includes litigations invoking provisions in Indian copyright and neighboring rights laws.

6. CONCLUSION

In today's world, being able to access information is most crucial, as this helps in promoting the spread of knowledge, democracy, abridgement of the digital divide and the making of more creative and technology-based products. Since developing countries need to access the latest developmental work being done in the developed world, this is all the more true for developing world. Developing countries should be able to access information in the public domain, which comes at zero cost or very little cost. In this context, broadcasting organisations call for an update of their rights, which though worded as a call for the protection of their signals, may go on to extend exclusive rights, in essence aimed at protecting their investments. Information can be disseminated via various means, such as wireless media that includes radio, television and satellite or through cable networks or by webcasting using the internet. According to extant law, broadcasting organizations are given legal protection only in the diffusion of content made through wireless means. Typically, broadcasters do not create the works that they transmit. Instead their role is to distribute the information contained in the newly-created works. As a result, broadcasters do not get copyright protection over the works they transmit since they do not create these. They only get rights over the use of these signals. The copyrights are given to the original creators of the works. So, we observe that there is a clear line that delineates content and content-carrying signal. Copyrights are given respectively to the creator of the content and the broadcaster that transmits these signals. This separation of the two is very vital, since it puts in place a new layer of intellectual property-like rights on top of the IPR enjoyed by the copyright holders.

India is the third-largest television market in the world, has much at stake vis-à-vis the viewers' right to information and broadcast material. As such the elementary goal for broadcasting regulation is to ensure citizens basic privileges to access information and expression of opinion(Patrica 2006) which was stated by the supreme court in its landmark judgment of 1995 pertaining to broadcast media 'airwaves are public property' (Bengal Cricket Association Vs Prasar Bharati). Their use has to be controlled by the government funded agency. Broadcasting Organisations in India delight in specific rights; furthermore these are steady with those International treaties and conventions that furnish for the selective rights-based approach. Thus, Rome convention 1961and TRIPs agreements in 1994 are the bedrock around which the Indian law relating to this segment has been developed. We required a solid state funded administration broadcasting which meets community needs that exist beyond traditional boundaries. The rivalry may be getting stiffer by private channels claiming to move into advanced technologies. Public

broadcasting may be in the bleeding edge about utilizing new technologies to give better service and programmes to significantly wider and more diverse community. With the cable network arriving at towns and villages in the country, the desire for quality programmes that informs and educate has also risen. Another important move from the government is Mandatory Signal Sharing Ordinance 2007 which ensures compulsory signal sharing of sports events with Prasar Bharati. Through this the public can watch sports events with national interest without paying anything more.

De-regulation emulated liberalization of the new market for broadcasting. Besides giving rise to new aggressive landscape, the market model of broadcasting eyes providing more options. A comprehensive list of sponsorship deals to each governing body and professional club side comprehensively is exhibited and analysed. The statistics indicate that the heading industry division is investing in cricket for financial services. The key revenue driver for major professional sport is now television and, many respects; this applies to cricket more than most major sports. Cricket has relied more heavily on broadcast revenue than most other major sport events. Those ascent from claiming Star India of the highest priority on the association need fallen amid its game-changing moves in the final one quite a while. Denoting its passage under the sports broadcasting space, Rupert Murdoch-promoted News Corp's Indian subsidiary obtained the BCCI's broadcasting rights for a whopping Rs 38. 51billion. The BCCI's rights acquisition might have been a sign about greater things to turn. In June 2012, News Corp purchased crazy ESPN's stake in the rise to joint wander shares of the organization ESPN Star Sports, to $335 million. Emulating the acquisition, the Indian arm of the sportscaster, ESPN, turned into Star India.

References

Adelstein, Richard P and Steven I. Peretz (1985): "The Competition of Technologies in Markets for Ideas: Copyright and Fair Use in Evolutionary Perspective," *International Review of Lawand Economics 5.*

Adukia, Rajkumar S (2007): *Handbook on Intellectual Property Rights in India, Law of Copyright and Neighbouring Rights: National and International Perspectives,* Oxford University Press, New Delhi.

Akester, Patricia (2006): "The Draft WIPO Broadcasting treaty and Its Impacts on Freedom of Expression," *E-Copyright Bulletin,* UNESCO, April – June.

Confederation of Indian Industry (2013): *CII's Response to TRAI's Consultation Paper (No. 01/2013) on the issues relating to Cross Media Ownership.*

Djankov, Simeon, Mc Liesh, Caralee,Nenova, Tatiana and Shleifer Andrei (2002): *Who Owns the Media?*, World Bank and Harvard University.

Federation of Indian Chambers of Commerce and Industry (2013): *Comments on Telecom Regulatory Authority of India's Consultation Paper on Issues relating to Media Ownership*, New Delhi.

Helberger, N (2006): "The Right to Information and Digital Broadcasting: About Monsters, Invisible Men and the Future of European Broadcasting Regulation," *Entertainment Law Review.*

IP Justice (2004): *Report on the WIPO Standing Committee on Copyright and Related Rights Consolidated Text for a Treaty on the Protection of Broadcasting Organisations*, Geneva 7-9 June.

Kumar, Girish and Relfi Paul (2009): "Rights of broadcasting organizations: Do we need legal reform?," *Indian Journal of Intellectual Property Law*, 5 (2).

Lee Artz, Yahya and R. Kamalipour (2003): *Globalization of Corporate Media Hegemony*, State University of New York Press.

Majumdar, Boria (2004): *Twenty Two Yards to Freedom: A Social History of Indian Cricket*, Viking Publications, New Delhi.

Mehta, Nalin (2010): "Batting for the Flag: Cricket, Television and Globalization in India," in

Dominic Malcolm, Jon Gemmell and Nalin Mehta, eds, *The Changing Face of Cricket: From Imperial to Global Game*, Routledge, London and New York.

Sunenblick, Jesse (2005): "Into the Great Wide Open: New Technology Could Radically Transform Broadcasting. The Dreamers and Players Are Already Debating How Far to Go," *Columbia Journalism Review*, March – April.

Thussu, D.K (2005): "The Transnationalization of Television: The Indian Experience," in J. Chalaby (ed.) *Transnational Television Worldwide: Towards a New Media Order*, I.B. Tauris, London.

Fiscal Indicators Across 15 States of India - What Do They Reveal? 2005-06 To 2013-14

R. Mohan & N. Ramalingam*

Abstract

The paper assesses the major trends in the public finances of the fifteen States of India (Andhra Pradesh, Bihar, Goa, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal) during the period 2005-06 to 2013-14. The study looked at the fiscal policy indicators of Capital Outlay, Revenue Expenditure, Development Expenditure, Own Tax Revenue, Sales/VAT and Devolution to LSGs as a proportion of GSDP and ranks the States according to Fiscal Performance based on a weighted average of the ranks in these. The study found that the middle income States have on an average, except West Bengal, have performed better in own tax effort. Madhya Pradesh is an exception among low income States in own tax effort. In proportion of development expenditure, low income States have been ahead of all States average, but their per capita development expenditure is lower than other States. In devolution of resources to Local State Governments, Kerala, Madhya Pradesh, Tamil Nadu, Uttar Pradesh have done better than other States and are above the all States average.

Key Words: Fiscal indicators, Capital Outlay, Revenue Expenditure, Development Expenditure

The paper attempts to look at the major trends in the public finances of the fifteen States of India (Andhra Pradesh, Bihar, Goa, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal) during the period 2005-06 to 2013-14. The period of analysis is ending with 2013-14 as data for Accounts figures is available upto 2013-14

The Paper [1]looks at the trends in Capital Outlay, Revenue Expenditure, Development Expenditure which comprises Social and Economic Services, Own Tax Revenue, Sales Tax/VAT, Devolution of resources to LSGs, Disbursement of Central

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grants and devolution of Central taxes. We also look at per capita development expenditure of the States. The fiscal performance of the States is ranked on the basis of the weighted average of these indicators instead of aggregate deficit indicators like Fiscal and Revenue deficit. The study compares the actual performance in expenditure and revenue trends across the States. For this, the standard base used is the Gross State Domestic Product (GSDP) at current Prices.

The time period covered saw substantial level of tax reform at the States' level through introduction of Value Added Tax (VAT) with tax credit for inputs to intra State sales, except for Petroleum products and alcoholicliquor for human consumption. This period is also one during which the States have been credited with for having achieved fiscal consolidation by eliminating revenue deficit and containing fiscal deficit.

1. EXPENDITURE TRENDS IN 15 MAJOR STATES- WHAT DO THEY REVEAL?

Trends in Capital Outlay

Gross Fiscal Deficit or borrowings during a year comprises Capital Outlay[1], Revenue Deficit and Net Lendings[2]. Expenditure on capital outlay is for creating physical capital assets and is considered to have growth inducing impacts in current and long term effects[3] When Revenue Deficit is eliminated, which most of the States have, Fiscal Deficit for a year will be entirely Capital Outlay. Let us now examine the trends in Capital Outlay of 15 major States.

The all States average of Capital Outlay to GSDP ratio during the period 2005-06 to 2013-14 is 2.40. Out of the 15 States, Haryana, Kerala, Maharashtra, Punjab, Tamil Nadu, Odisha and West Bengal have ratios below the all States average. When we look at States income category- wise, out of the 4 high income States, only Goa at 3.62, has a ratio above the all States average The other three Maharashtra, Punjab and Haryana have ratios less than the all States average.

Among the middle income category, Karnataka and Gujarat have ratios above all- States average, with that of Gujarat is marginally higher 0.09 and that of Karnataka's higher by 0.86. The ratio of Kerala and West Bengal is way below the all States average by 1.39 and 1.59 respectively, where as that of Tamil Nadu is less by 0.34.

Out of the low income States, Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh have ratios higher than the all States average, while Odisha has a lower ratio. Out of the 15 States, 8 States have proportion of Capital Outlay to GSDP above the all States average. In these 8, 4 are from low income category, 1 from high income category and 2 from middle income category. In other words, all except 1 among low income

category, 1 out of 4 in the high income category and 2 out of 5 in the middle income category have proportion of Capital Outlay to GSDP higher than all India average. In other words, the low income States have a higher proportion of Capital Outlay to GSDP than States in other categories.

Table 1: Capital outlay as a proportion of GSDP- Trends

State	Average of Capital outlay to GSDP Ratios	Category of States	Above +Below All States Average
Andhra Pradesh	2.60	Middle	0.20
Bihar	4.49	Low	2.09
Goa	3.62	High	1.22
Gujarat	2.49	Middle	0.09
Haryana	1.95	High	-0.45
Karnataka	3.26	Middle	0.86
Kerala	1.01	Middle	-1.39
Madhya Pradesh	3.84	Low	1.44
Maharashtra	1.86	High	-0.54
Odisha	2.23	Low	-0.17
Punjab	1.25	High	-1.15
Rajasthan	2.54	Low	0.14
Tamil Nadu	2.06	Middle	-0.34
Uttar Pradesh	3.83	Low	1.43
West Bengal	0.81	Middle	-1.59
All States Average	2.40		

Source: Computed from data available in State Finances: A Study of the Budgets

When we look at the proportion of Capital Outlay to Fiscal Deficit, it is seen that the lowest ratios are by West Bengal, Kerala and Punjab. But in Kerala's case, there has been a steady improvement in the proportion of Capital Outlay to GSDP during 2006-07 to 2010-11. In West Bengal, the improvement is seen only in 2013-14. The trend in Punjab is fluctuating. In other States, more than 80 percent of Gross Fiscal Deficit comes from Capital Outlay. Since Fiscal Deficit has not reached 3 percent of GSDP (the limit permissible under the FRBM Act), there is still scope for more Capital Outlay. Overall the quality of Fiscal Deficit, going by the utilisation of borrowed funds for creating

physical capital including infrastructure, has improved for the majority of the states. This is an important movement toward debt sustainability.

Table 2: Proportion of Capital Outlay to Gross Fiscal Deficit

State	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Andhra Pradesh	92.30	524.30	145.37	83.56	98.43	94.24	89.09	86.52	86.89
Bihar	56.30	172.49	358.01	256.72	139.09	231.74	149.75	146.26	89.27
Goa	96.30	128.54	127.36	110.33	87.90	214.04	134.09	81.74	-0.47
Gujarat	111.00	138.90	142.55	97.91	53.14	64.23	125.20	128.74	3.26
Haryana	564.40	-205.94	271.04	68.65	51.73	55.51	75.10	55.60	4.43
Karnataka	157.90	182.23	162.24	113.03	111.68	124.98	126.10	106.69	99.00
Kerala	19.50	23.63	24.18	26.73	26.18	43.47	30.05	30.67	44.90
Madhya Pradesh	144.90	187.73	245.44	151.40	127.74	166.98	157.29	122.82	106.96
Maharashtra	57.20	87.35	-407.30	134.82	66.63	95.23	89.53	126.64	85.09
Orissa	375.50	-176.31	-214.89	1131.44	160.79	650.00	-725.81	FD = 0	132.77
Punjab	57.10	59.01	47.61	42.72	35.17	33.33	18.85	20.53	51.65
Rajasthan	83.40	121.13	192.37	84.61	50.19	127.12	196.14	125.21	83.88
Tamil Nadu	180.20	150.46	202.44	106.50	72.57	74.71	94.61	88.20	91.31
Uttar Pradesh	86.40	145.44	122.88	108.94	134.24	117.51	139.79	123.86	118.40
West Bengal	17.20	17.65	23.58	27.33	12.06	11.42	15.59	23.76	42.17

Source: Computed from data available in State Finances: A Study of the Budgets

Trends in Revenue Expenditure

Having seen the trends in Capital Outlay, let us now look at the trends in revenue expenditure of the 15 major States. The all States average of revenue expenditure as a proportion of GSDP is 13.57. Out of the 15 States, 4 States have proportion of revenue deficit to GSDP less than all India average. Two of them are high income States, namely, Haryana and Maharashtra. The other two are middle income States, namely, Gujarat and Tamil Nadu. All the low income States, Bihar, Madhya Pradesh, Odisha, Rajasthan and Uttar Pradesh have proportion of revenue expenditure to GSDP higher than all States average. Among the middle income States, Andhra Pradesh, Karnataka, Kerala and West Bengal have revenue expenditure to GSDP higher than all States average. Let us now look at whether, the higher revenue expenditure proportion, especially among the low

income States is due to higher proportion of development expenditure or not. While computing development expenditure, the figure shown in the budgets under the head development expenditure and the devolution to Local Self Governments has been taken together as these amounts are spent for development works by the LSGs.

Table 3: Proportion of Revenue Expenditure to GSDP- 2005-06 to 2013-14

State	Average of Revenue Expenditure to GSDP Ratios	Categoryof States	Above +BelowAll States Average
Andhra Pradesh	13.85	Middle	0.28
Bihar	19.73	Low	6.16
Goa	14.21	High	0.64
Gujarat	10.47	Middle	-3.10
Haryana	11.49	High	-2.08
Karnataka	14.26	Middle	0.69
Kerala	14.13	Middle	0.56
Madhya Pradesh	16.38	Low	2.81
Maharashtra	10.39	High	-3.18
Orissa	15.52	Low	1.95
Punjab	14.42	High	0.85
Rajasthan	14.43	Low	0.86
Tamil Nadu	12.73	Middle	-0.84
Uttar Pradesh	17.45	Low	3.88
West Bengal	13.73	Middle	0.16
All States Average	13.57		

Source: Computed from data available in State Finances: An Analysis of Budgets, RBI, Various issues

Table 4: Proportion of Development Expenditure to GSDP- 2005-06 to 2013-14

State	Average of Development Expenditure to GSDP Ratios	Category of States	Above +Below All States Average
Andhra Pradesh	9.17	Middle	0.76
Bihar	12.09	Low	3.68
Goa	9.80	High	1.39
Gujarat	6.57	Middle	-1.84
Haryana	7.87	High	-0.54
Karnataka	10.21	Middle	1.80
Kerala	7.76	Middle	-0.65
Madhya Pradesh	10.96	Low	2.55
Maharashtra	6.59	High	-1.82
Orissa	9.67	Low	1.26
Punjab	6.67	High	-1.74
Rajasthan	9.12	Low	0.71
Tamil Nadu	8.22	Middle	-0.19
Uttar Pradesh	10.04	Low	1.63
West Bengal	7.44	Middle	-0.97
All States Average	8.41		

Source: Computed from data available in State Finances: An Analysis of Budgets, RBI, Various issues

The proportion of development expenditure to GSDP of low income States is higher than the all States average. Except for Uttar Pradesh and Bihar, where the higher proportion of development expenditure accounts for 50 percent of the higher proportion of revenue expenditure to GSDP, in other low income States, almost the entire difference is due to higher development expenditure.

Among the middle income States, the compression in proportion of revenue expenditure to GSDP in the case of Gujarat to the tune of 3.10 percent is accounted partly by decrease in proportion of development expenditure by 1.84 percent and balance from non-development expenditure. Andhra Pradesh has proportion of revenue expenditure to GSDP higher than all States average by 0.28 percent but the same for development expenditure is higher than all States average by 0.76 percent. This implies that the lesser rise in proportion of revenue expenditure is due to containing of non-

development expenditure. In the case of Karnataka, higher revenue expenditure proportion has been contained at 0.69 percent inspite of greater proportion of development expenditure to the tune of 1.80 percent, by decrease in non-development expenditure. In the case of Kerala, the higher proportion of revenue expenditure at 0.69 percent is entirely due to higher proportion of non-developmental expenditure as the proportion of revenue expenditure is lower by 0.65 percent. Similar is the case with West Bengal where proportion of revenue expenditure is higher by 0.16 and development expenditure is lower by 0.97.The higher proportion of revenue expenditure in the case of Kerala is due to the increase after 2011-12. In the case of Tamil Nadu, proportion of revenue expenditure is lower by 0.4 and that of development expenditure by 0.19, implying a larger reduction in non-developmental expenditure.

In the case of Haryana, the proportion of revenue expenditure is lower by 2.08 percent whereas, the proportion of development expenditure is lower by 0.54, implying that proportion of non-developmental expenditure has been substantially lower. Similar is the case with Maharashtra where the ratios are less by 3.18 and 1.82 respectively. In the case of Punjab, the proportion of revenue expenditure is higher by 0.85 percent and that of development expenditure is less by 1.74 percent, implying a higher proportion of non-development expenditure to GSDP.

Overall, the proportion of development expenditure to GSDP is higher than all States average, for low income States and higher proportion of revenue expenditure to GSDP in their case is due to the higher proportion of development expenditure,. Punjab, West Bengal and Kerala are the States with lesser proportion of development expenditure and higher proportion of revenue expenditure than all States average. All high income States, other than Goa have proportion of development expenditure to GSDP less than all States average than all States average. Among them Maharashtra and Haryana have proportion of revenue expenditure lesser than all States average and the percentage by which it is less is higher than the gap between their proportion of development expenditure to GSDP and all States average. This implies that there is more than proportionate fall of non developmental expenditure proportion in these States.

Alternative measure -Per capita Development and Non-Developmental Expenditure

Haryana, a high income State ranks 1 in per capita development expenditure. But the middle income States of Karnataka, Tamil Nadu, Kerala and Andhra Pradesh rank 2 to 5 in the same. Another middle income State, Gujarat ranks 7 and West Bengal ranks 11. High income States of Maharashtra and Punjab rank 6 and 8. The low income States which have a higher population rank lowest with Madhya Pradesh, Uttar Pradesh and Bihar ranking 12, 13 and 14 respectively.

In non-developmental expenditure also, low income States rank lowest. Here, the high income State Punjab ranks 1 and Kerala, a middle income State ranks, 2. Haryana and Tamil Nadu rank 3 and 4 respectively. Andhra Pradesh ranks 8. Gujarat and West Bengal rank 6 and 7 respectively. The low income States of Odisha, Rajasthan, Madhya Pradesh, Uttar Pradesh and Bihar rank 10, 11,12, 13 and 14 respectively. Karnataka ranks 9. The correlation between ranks of per capita development and non-development expenditure is 0.70. Karnataka, a middle income State, is the only State which ranks high in per capita development expenditure, 2, and low in per capita non development expenditure, 9. States like Kerala and Tamil Nadu which rank high in per capita development expenditure rank high in per capita non-development expenditure also. One reason could be higher social sector spending during the past, in health and education, which are personnel oriented, involving high salary component, has now raised the pension expenditure, which is classified as non-development expenditure. Low income States have low own tax base, but receive a higher share of Central taxes and grants. The devolution mechanism needs to be reexamined so that higher per capita development expenditure can be achieved.

Table 5: Ranking of States by Per capita Development and Non-Development Expenditure

State	Dev Exp Pc	Rank	Non DevExp Pc	Rank	Category
Andhra Pradesh	5797	5	2882	8	Middle
Bihar	1775	14	1053	14	Low
Gujarat	5233	7	2992	6	Middle
Haryana	7291	1	3337	3	High
Karnataka	6388	2	2432	9	Middle
Kerala	5925	4	4738	2	Middle
Madhya Pradesh	2892	12	1354	13	Low
Maharastra	5670	6	3169	5	High
Orissa	4260	9	2386	10	Low
Punjab	5074	8	5621	1	High
Rajasthan	4173	10	2297	11	Low
Tamil Nadu	6096	3	3228	4	Middle
Uttar Pradesh	2720	13	1988	12	Low
West Bengal	3583	11	2922	7	Middle

Source: Computed from data available in State Finances: An Analysis of Budgets, RBI, Various issues

2. REVENUE PERFORMANCE OF STATES- AN OVERVIEW

Here, we look at two indicators, the States' Own Tax Revenue and States' commodity taxes, that is, Sales Tax and VAT. We are using ratios of GSDP for both revenue and expenditure, as it is a data base available for every year. Moreover, it is at present internationally accepted base for measuring tax effort. An alternative suggested is consumption expenditure. But consumption data is not available for all the years as the results of the quinquennial thick samples and yearly thin samples of National Sample Survey Organisation (NSSO) are not comparable[5]. Hence, no reliable annual consumption data series can be constructed. In other words, GSDP, which is available on year to year basis, is taken to measure tax effort, as the subsectors of the GSDP, especially the trade sector, will reflect the consumption expenditure in their value added. Moreover, as a standard base, GSDP is used across the States to compare expenditure patterns also. The relative merits of different bases as measure of tax potential is discussed in brief below. As regards tax potential, the theme of the paper does not include this. The actual own tax revenue performance is compared across the States. As a note of caution, it needs to be mentioned that the relative ranking of own tax effort does not relate to how best a State is exploiting its tax potential. For comparison, only taxes on intra State sales have been taken and Central Sales Tax (CST), the origin based tax levied by the exporting State on inter State sales is excluded. It is possible that even the States with the relative best performance could have a greater tax potential. It requires a separate study and is beyond the scope of this paper. However, the findings of some studies on tax capacity of Indian States are cited below.

Brief Review of some Studies on Tax Capacity of Indian States

Garg, Goyal and Pal (2014) have estimated tax capacity of Indian States using Stochastic Frontier Approach (SFA) and identified States performing near tax frontier and far below tax frontier. As per their estimates, the States near 100% of tax effort are Gujarat, Karnataka, Maharashtra, Punjab, Haryana and Tamil Nadu. States showing very low tax effort are Orissa, Bihar and West Bengal at less than 50 percent and Uttar Pradesh at 62 percent. Kerala is at 90 percent of tax potential. Panagriya, Chakraborthy and Rao (2014) have estimated tax capacity of Indian States by regression method with logarithmic transformation of per capita tax revenue, as the dependent variable and logarithmic transformation of per capita GSDP and primary sector share in GSDP as dependent variables for the period 1991-92 to 2009-10. It was found that the relationship between per capita tax revenue and per capita GSDP is positive and statistically significant while that with the share primary sector in GSDP is negative, but not statistically significant. Tax effort is measured as ratio of actual revenue to the revenue that should have been raised with the tax capacity estimated. States were ranked with index of 100 for States with average tax effort, above 100 for States with more than average tax effort and below 100 for States with less than average tax effort. Andhra

Pradesh, Chhattisgarh, Karnataka, Kerala. Madhya Pradesh, Rajasthan and Tamil Nadu have index above 100, while Assam, Bihar, Gujarat, Haryana, Jharkhand, Maharashtra, Odisha, Punjab, Uttar Pradesh and West Bengal have index below 100 during 2009-10. Raychaudhuri and Roy (2013) measure tax base as registered manufacturing, registered trade and construction sectors of GSDP. Proportion of unregistered trade to total trade value added is also included as an explanatory variable. The ratio of tax potential to actual tax of States, which is the inverse of tax effort, is measured. States with ratio less than 1 have more than average tax effort and States with ratio more than 1 have less than average tax effort. Andhra Pradesh, Chhattisgarh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Punjab, Tamil Nadu and Uttar Pradesh have more than average tax effort and Bihar, Goa, Gujarat, Haryana, Jharkhand, Odisha, Rajasthan and West Bengal have less than average tax effort. Raju (2012) has estimated taxable capacity of 17 non-Special Category States for aggregate tax effort and has ranked Andhra Pradesh as 1 followed by Madhya Pradesh, Bihar, Rajasthan, Uttar Pradesh and Kerala. For estimating Sales tax potential, Average Private Consumption Expenditure (APCE) is included as an independent variable along with Manufacturing Sector GSDP. The former is significant at 5 percent level while the latter is significant at 1 percent level. Purohit (2006) estimated taxable capacity and tax effort of various taxes comprising Own Tax Revenue of States and found that in Sales Tax effort, Kerala ranks 1 followed by Tamil Nadu, Goa, Andhra Pradesh and Karnataka. Sen (1997) measures capacity of a State for Sales tax collection as a function of per capita net State Domestic Product, share of agriculture in total SDP, urbanisation as per 1991 census and number of scheduled bank branches. Kerala ranks first in tax effort for Sales Tax, followed by Gujarat, Karnataka, Bihar and Tamil Nadu. In Condoo et al, which has estimated relative tax performance for selected states during 1986-87 to 1996-97, the best performing States are Goa, Gujarat, Karnataka, Kerala, Rajasthan and Tamil Nadu and the worst performing states are Assam, Orissa and West Bengal. The States with medium level performance are Bihar, Haryana, Madhya Pradesh and Uttar Pradesh. Some other States start out at the medium/ top level and show a declining trend are Andhra Pradesh, Maharashtra and Punjab.

Own Tax Revenue Ratio

Table 6: Proportion of Own Tax Revenue to GSDP

State	Average of Own Tax Revenue to GSDP Ratios	Category of States	Above +Below All States Average
Andhra Pradesh	7.80	Middle	0.56
Bihar	4.77	Low	-2.47
Goa	6.85	High	-0.39
Gujarat	7.02	Middle	-0.22
Haryana	7.09	High	-0.15
Karnataka	9.74	Middle	2.50
Kerala	8.03	Middle	0.79
Madhya Pradesh	7.76	Low	0.52
Maharashtra	7.25	High	0.01
Orissa	5.80	Low	-1.44
Punjab	7.26	High	0.02
Rajasthan	6.52	Low	-0.72
Tamil Nadu	8.77	Middle	1.53
Uttar Pradesh	6.97	Low	-0.27
West Bengal	4.67	Middle	-2.57
All States Average	7.24		

Source: Computed from data available in State Finances: An Analysis of Budgets, RBI, Various issues

Own tax revenue of States mainly comprises commodity taxation, that is Sales Tax/ Value Added Tax (VAT). Since 2005-06, States have replaced the General Sales Tax with VAT for intra State trade of commodities, within put tax credit. Petroleum, Petroleum products and alcoholic liquor for human consumption are outside VAT and are covered by Sales Tax and State Excise Duty. When we look at the State wise trends, it is seen that among the middle income States, Andhra Pradesh, Karnataka, Kerala and Tamil Nadu have Own Tax Revenue ratio to GSDP higher than the all States average of7.24 percent. But own tax revenue- GSDP ratio Gujarat and West Bengal at7.02 and 4.67 percent are 0.22 and 2.57 percent less than all States average.

Among the high income States, Goa and Haryana have ratios less than all States average by 0.39 and 0.15 percent respectively, whereas the ratios of Maharashtra and Punjab are marginally higher by 0.01 and 0.02 percent respectively than all States average. It is clear that the middle income States gave performed better than high income States in own tax effort. Among the low income States Madhya Pradesh has Own Tax Revenue ratio higher than all States average by 0.52 percent.

Table 7: State Wise Ranking of Own Tax Revenue- GSDP ratio

State	OTR GSDP Ratio	Rank
Karnataka	9.74	1
Tamil Nadu	8.77	2
Kerala	8.03	3
Andhra Pradesh	7.8	4
Madhya Pradesh	7.76	5
Punjab	7.26	6
Maharashtra	7.25	7
Haryana	7.09	8
Gujarat	7.02	9
Uttar Pradesh	6.97	10
Goa	6.85	11
Rajasthan	6.52	12
Orissa	5.8	13
Bihar	4.77	14
West Bengal	4.67	15

Source: Computed from data available in State Finances: An Analysis of Budgets, RBI, Various issues

It can be seen that the top 5 States in Own tax revenue to GSDP are in the middle income category. But two middle income States Gujarat and West Bengal, have ranks 9 and 15 respectively. Among the low income States, Madhya Pradesh has a high own tax revenue GSDP ratio and ranks 6 at the all States level and is ahead of all high income States. The high income States of Maharashtra, Haryana and Goa rank 7, 8 and 11 respectively.

In the ratio of commodity taxes (which is the largest component of own tax revenue of States) to GSDP, all middle income States, except West Bengal, have ratios above the all States average, with Kerala having 1.59 percent and Gujarat having 0.06 percent above the all States average. Among the high income States, Haryana and Maharashtra have ratios less than all States average by 0.02 and 0.22 percent respectively, while Goa's ratio is higher by 0.11 percent and Punjab's ratio is equal to all States average. All low income States including Madhya Pradesh, which had a higher Own Tax Revenue ratio, have ratios less than all States average for Sales Tax/VAT to GSDP. States like Karnataka, Madhya Pradesh rank higher in Own Tax Revenue to GSDP due to components other than Sales Tax/VAT in Own Tax revenue. In case of Kerala and Goa, other components in Own Tax revenue are less and their rank in Own Tax GSDP ratio is less than that Sales Tax/VAT GSDP ratio.

Table 8: Proportion of Sales Tax/VAT to GSDP

State	Average Sales Tax/VAT to GSDP Ratios	Category of States	Above +Below All States Average
Andhra Pradesh	4.87	Middle	0.90
Bihar	2.35	Low	-1.62
Goa	4.08	High	0.11
Gujarat	4.03	Middle	0.06
Haryana	3.95	High	-0.02
Karnataka	4.79	Middle	0.82
Kerala	5.56	Middle	1.59
Madhya Pradesh	3.45	Low	-0.52
Maharashtra	3.75	High	-0.22
Orissa	3.16	Low	-0.81
Punjab	3.97	High	0.00
Rajasthan	3.58	Low	-0.39
Tamil Nadu	5.08	Middle	1.11
Uttar Pradesh	3.54	Low	-0.43
West Bengal	2.58	Middle	-1.39
All States Average	3.97		

Source: Computed from data available in State Finances: An Analysis of Budgets, RBI, Various issues

Table 9: State Wise Ranking of Sales Tax/VAT- GSDP ratio

State	Sales Tax/ VAT GSDP Ratio	Rank	Own Tax Revenue – Gsdp Rank
Kerala	5.56	1	3
Tamil Nadu	5.08	2	2
Andhra Pradesh	4.87	3	4
Karnataka	4.79	4	1
Goa	4.08	5	11
Gujarat	4.03	6	9
Punjab	3.97	7	6
Haryana	3.95	8	8
Maharashtra	3.75	9	7
Rajasthan	3.58	10	12
Uttar Pradesh	3.54	11	10
Madhya Pradesh	3.45	12	5
Orissa	3.16	13	13
West Bengal	2.58	14	15
Bihar	2.35	15	14

Source: Computed from data available in State Finances: An Analysis of Budgets, RBI, Various issues

3. DEVOLUTION TO LOCAL SELF GOVERNMENTS (LSGs)

States devolve funds to LSGs as per recommendations of the State Finance Commissions. However, there is no standard accounting procedure in the State budgets for devolution to LSGs. In the Kerala context, the procedure is that the entire funds devolved is shown under Non-Plan Revenue head and will fall under the head non-developmental expenditure. However, much or entire funds are spent by LSGs on development expenditure comprising spending on social and economic services. Unless devolution to LSGs is considered, a clear picture of development expenditure will not be there. In our analysis, development expenditure as a proportion of GSDP for all States was worked out by adding devolution to LSGs also

In the proportion of devolution to LSGs to GSDP, Kerala ranks first among the Indian States. Other middle income States Tamil Nadu and Karnataka are also above the all States average, while Gujarat and West Bengal are below the all States average. Among the low income States, Madhya Pradesh is above all States average s second to Kerala in the proportion of devolution to LSGs. But, all high income States are below the all States average. Among the low income States, Bihar, Odisha and Rajasthan are below while Uttar Pradesh is above all States average. Only 5 out of the 15 States, Kerala, Karnataka, Madhya Pradesh, Tamil Nadu and Uttar Pradesh have proportion of devolution higher than the all States average and others have ratios much below that, implying that efforts at devolving funds to LSGs have been far from adequate.

Table 10: Proportion of Devolution of LSGs to GSDP

State	Average of Devolution to LSGs to GSDP Ratios	Category of States	Above +Below All States Average
Andhra Pradesh	0.05	Middle	-0.34
Bihar	0.01	Low	-0.38
Goa	0.00	High	-0.39
Gujarat	0.04	Middle	-0.35
Haryana	0.11	High	-0.28
Karnataka	0.78	Middle	0.39
Kerala	1.03	Middle	0.64
Madhya Pradesh	1.01	Low	0.62
Maharashtra	0.13	High	-0.26
Orissa	0.26	Low	-0.13
Punjab	0.25	High	-0.14
Rajasthan	0.03	Low	-0.36
Tamil Nadu	1.00	Middle	0.61
Uttar Pradesh	0.82	Low	0.43
West Bengal	0.11	Middle	-0.28
All States Average	0.39		

Source: Computed from data available in State Finances: An Analysis of Budgets, RBI, Various issues

4. TRENDS IN CENTRAL GRANTS

The proportion of grants to GSDP is above all States average for all the low income States. Together, they get 6.66 percent more than all States average. Middle income States except Karnataka and West Bengal get less than all States average and together their share is less by 2.07 percent than all States average. All high income States get less than all States average and together their share is less by 2.59 percent. This implies that during the period, there has been overall progressivity in disbursement of grants.

Table 11: Trends in Central Disbursement of Grants

State	Average of Central Grants to GSDP Ratios	Category of States	Above +Below All States Average
Andhra Pradesh	1.68	Middle	-0.12
Bihar	4.46	Low	2.66
Goa	0.73	High	-1.07
Gujarat	1.00	Middle	-0.80
Haryana	1.37	High	-0.43
Karnataka	1.93	Middle	0.13
Kerala	1.19	Middle	-0.61
Madhya Pradesh	3.17	Low	1.37
Maharastra	1.18	High	-0.62
Orissa	3.50	Low	1.70
Punjab	1.33	High	-0.47
Rajasthan	2.03	Low	0.23
Tamil Nadu	1.25	Middle	-0.55
Uttar Pradesh	2.50	Low	0.70
West Bengal	1.96	Middle	0.16
Average	1.80		-0.12

Source: Computed from data available in State Finances: An Analysis of Budgets, RBI, Various issues

5. TRENDS IN CENTRAL TAXES

The proportion of grants to GSDP is above all States average for all the low income States, whereas that of middle and low income States has been below all States average. There has been a high degree of progressivity in devolution of Central taxes. This is due to the fact that the distance from per capita income of a State from that of the highest three has been a major criterion in the formula adopted by the Finance Commissions for devolution of taxes. It can be seen from tables 10, 11 and 12 that the degree of progressivity of devolution of Central taxes is more than that of Central grants. In other words, though both Central grants and taxes have been progressive, that is, more share is devolved to lower income States, the degree of progressivity is more for tax devolution which is formula based as can be seen from the multiple of share of low income States as that of middle and high income States. Lower income States get a higher multiple of tax devolution than that of grant disbursement. A more progressive devolution system needs to be formula based with lesser discretionary element as in the case of tax devolution.

Table 12: Trends in Central Devolution of Taxes

State	Average of Central Tax Devolution to GSDP Ratios	Category of States	Above +Below All States Average
Andhra Pradesh	2.74	Middle	-0.38
Bihar	11.83	Low	8.71
Goa	1.75	High	-1.37
Gujarat	1.43	Middle	-1.69
Haryana	0.95	High	-2.17
Karnataka	2.34	Middle	-0.78
Kerala	2.01	Middle	-1.11
Madhya Pradesh	5.59	Low	2.47
Maharastra	1.07	High	-2.05
Orissa	5.24	Low	2.12
Punjab	1.28	High	-1.84
Rajasthan	3.80	Low	0.68
Tamil Nadu	1.99	Middle	-1.13
Uttar Pradesh	7.01	Low	3.89

West Bengal	3.31	Middle	0.19
Average	3.12		

Source Computed from data available in State Finances: An Analysis of Budgets, RBI, Various issues

Table 13: Comparison of Central Grant and Tax Devolution

State Category	Grants/GSDP	Tax/GSDP	Grant Gap	Tax Gap
High	4.61	5.5	Middle: High(2.74)	Middle: High(1.96)
Middle	9.02	13.82	Low: High(3.40)	Low: High(6.62)
Low	15.66	33.47	Middle: Low(1.74)	Middle: Low(2.42)

Source: Computed from data available in State Finances: An Analysis of Budgets, RBI, Various issues

6. RANKING STATES BE FISCAL PERFORMANCE

Table 14: Fiscal Performance Ranking of States

State	Co/GSDP Rank	De/GSDP Rank	LSG/GSDP Rank	OTR/GSDP Rank	ST/VAT/ GSDP	Weighted Rank	Fiscal Perfor-mance Rank	Income Category
Andhra Pradesh	6	7	11	4	3	6.765	5	Middle
Bihar	1	1	14	14	15	7.485	7	Low
Goa	4	5	15	11	5	7.85	8	High
Gujarat	8	15	12	9	6	10.505	14	Middle
Haryana	11	10	10	8	8	9.65	11	High
Karnataka	5	3	5	1	4	3.825	2	Middle
Kerala	14	11	1	3	1	6.99	6	Middle
Madhya								
Pradesh	2	2	2	5	12	3.605	1	Low
Maharastra	12	14	8	7	9	10.42	13	High

Orissa	9	6	6	13	13	8.44	9	Low
Punjab	13	13	7	6	7	9.805	12	High
Rajasthan	7	8	13	12	10	9.62	10	Low
Tamil Nadu	10	9	3	2	2	5.97	4	Middle
Uttar								
Pradesh	3	4	4	10	11	5.335	3	Low
West Bengal	15	12	9	15	14	12.535	15	Middle

Source: Computed from data available in State Finances a Study of Budgets, Reserve Bank of India, various issues

Instead of ranking fiscal performance of States by aggregate deficit indicators like fiscal deficit and revenue deficit, the ranking of fiscal performance is done as a weighted average of the ranks for Capital Outlay, Development Expenditure, Devolution to Local Self Governments, Own Tax Revenue, and Sales Tax/VAT as a proportion of GSDP respectively. The average ratio of these, as a proportion of GSDP for the period 2005-06 to 2013-14 is taken and a weight of 25 percent is to Capital Outlay/GSDP, Development Expenditure/GSDP, Devolution to Local Self Governments/GSDP respectively and 12.5 percent to Own Tax Revenue/GSDP and Sales Tax/VAT/GSDP is given. The weighted average of the ranks is arranged in the descending order and the States are ranked for fiscal performance.

Madhya Pradesh, a low income category State, ranks 1 and Karnataka ranks 2 followed by Uttar Pradesh, Tamil Nadu, Andhra Pradesh and Kerala. All the high income category States rank lower than these States. The rank of Gujarat and West Bengal are 14 and 15 respectively. Gujarat ranks low in development expenditure and devolution to Local Self Government. West Bengal has ranked very low in capital outlay and own revenue effort. Bihar ranks 1 in capital outlay and development expenditure, but ranks low in devolution to Local Self Governments and Own Revenue Effort.

Table 15: Fiscal Performance Ranking and Ranking by Revenue Deficit GSDP ratio of States

State	Fiscal Performance Rank	Rank of Revenue Deficit-GSDP Ratio
Andhra Pradesh	5	10
Bihar	7	3
Goa	8	7
Gujarat	14	6
Haryana	11	12
Karnataka	2	4
Kerala	6	13
Madhya Pradesh	1	1
Maharastra	13	11
Odisha	9	2
Punjab	12	14
Rajasthan	10	8
Tamil Nadu	4	9
Uttar Pradesh	3	5
West Bengal	15	15

Source: Computed from data available in State Finances a Study of Budgets, Reserve Bank of India, various issues

When Fiscal Performance Rank is compared with the conventional indicator of Revenue Deficit GSDP ratio Rank (States with lower Revenue Deficit GSDP ratio get better rank), it is seen that it is same only for Madhya Pradesh and West Bengal with ranks 1 and 15 respectively. Andhra Pradesh, Kerala and Tamil Nadu are substantially higher in Fiscal Performance Rank than in ranking of Revenue Deficit- GSDP ratio, by 5, 7 and 5 ranks respectively. On the contrary, Bihar, Odisha and Gujarat rank lower by 4, 7 and 8 in Fiscal Performance Rank than in revenue Deficit GSDP ratio Rank. Middle income States except West Bengal and the low income State of Uttar Pradesh rank better in Fiscal Performance Rank than in Revenue Deficit GSDP ratio Rank. High income States rank low both in Fiscal Performance and Revenue Deficit GSDP ratio.

When the correlation of the two ranks were tested using Spearman's rank correlation test, the correlation coefficient is 0.5536 and the correlation between the ranks is statistically significant at 3 percent level. It needs to be stated that the number of observations are only 15. When individual ranks are seen, the differences mentioned above were seen.

Results of Spearman's Rank Correlation Test

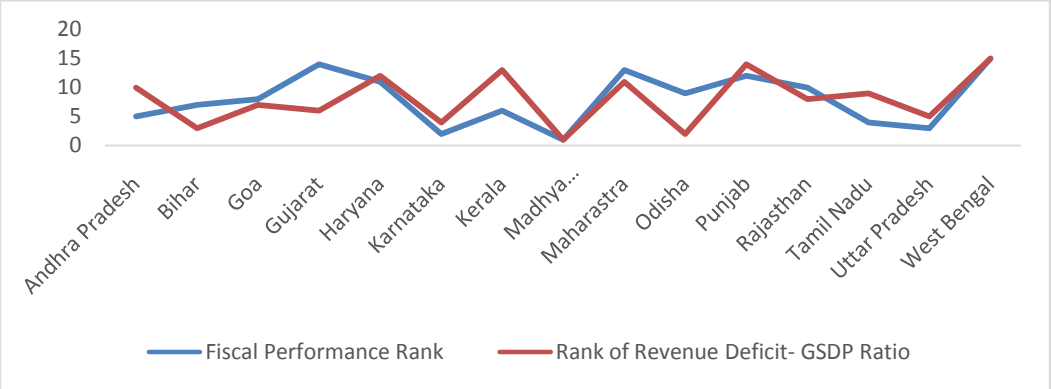
Number of observations = 15

Spearman's rho = 0.5536

Test of Null Hypothesis Ho: fiscal and revenue are independent

Prob > |t| = 0.0323

Figure 1: Association between Ranks of Fiscal Performance and Revenue Deficit GSDP Ratio



Source: Computed from data available in State Finances Study of Budgets RBI various issues

From Figure 1, it is clear that States at the left side of the horizontal axis and lower side of the vertical axis as well as States at the right side of the horizontal axis and higher side of the vertical axis have almost same ranks as per Fiscal Performance and Revenue Deficit- GSDP ratio. Kerala is having a better position as regards fiscal performance but not so in the case of Revenue Deficit- GSDP ratio, as it is at the left side of the horizontal axis and higher side of the vertical axis. Similarly, Gujarat is

having low position in Fiscal Performance indicator but a better position n Revenue Deficit-GSDP ratio.

Treasury Surplus of States

Table 16: Treasury Surplus as a proportion of GSDP

State	Treasury Surplus as a Ratio of GSDP	Rank
Andhra Pradesh	0.70	12
Bihar	1.89	4
Goa	1.45	10
Gujarat	1.42	11
Haryana	1.52	7
Karnataka	1.62	5
Kerala	0.67	13
Madhya Pradesh	1.49	8
Maharashtra	1.46	9
Odisha	2.69	1
Punjab	0.23	14
Rajasthan	1.58	6
Tamil Nadu	1.97	3
Uttar Pradesh	2.02	2
West Bengal	0.04	15
All States Average	0.72	

Source: Computed from data available in State Finances Study of Budgets RBI various issues

Another indicator that can be looked at is the treasury surplus of States. These are investments in Government of India short term treasury bills by the States as on 31st March of a financial year. The table below gives the average of Treasury Surplus to GSDP for 2005-06 to 2013-14. Borrowed funds of States, if not spent is invested in shorter Government of India Treasury bills. The interest earned on these Treasury Bills is less than the cost of funds borrowed by the States. In other words, a very high balance in treasury bills is indicative of not so prudent management of cash by the State. At the same time, balance necessary to meet contingences need to be kept also. All the States, which have achieved revenue surplus are having treasury surplus GSDP ratio, in the case

of some, more than double the all India average. For meeting deficit targets, high cost borrowed funds including from National Small Savings Fund (NSSF) is unspent and gets invested in low yielding treasury bills. For a detailed analysis, see Isaac and Ramakumar (2006).

7. OWN TAX REVENUE, CENTRAL GRANTS AND CENTRAL TAXES-ASSOCIATION WITH DEVELOPMENT EXPENDITURE

States major sources of revenue are Own Tax Revenue, Central Grants and devolution of Central Taxes. Central Grants are disbursed for specific purposes by the Central Ministries and the Planning Commission and for general purposes under Article 275 by the Finance Commissions. Grants for specific purposes are disbursed mainly for Centrally Sponsored Schemes and Central Schemes. Since these grants are linked to specific purposes under social and economic services, the hypothesis is that their association with development expenditure will be strong. As far as Own Tax revenue effort and Central Taxes are concerned, their spending is not meant for specific purposes and their association with development expenditure will reveal the priorities of the States towards development expenditure, The results of Panel Data Regression using Random Effects Model to test the association between Development Expenditure and Central Grants, Central Taxes and Own Tax Revenue are as follows:

de = a + b cg + c ct + d otr + u de= Development Expenditure/GSDP, cg = Central Grants/GSDP, ct= Central Taxes/GSDP, otr= Own Tax Revenue/GSDP. Development Expenditure is the dependent variable and Central Grants, devolution of Central Taxes and Own Tax Revenue Effort are independent variables. Hausman Fixed random Test and Breusch and Pagan Lagrangian multiplier test for random effects have revealed that Random Effects Model is the best one.

Random-effects GLS regression	Number of obs	= 135
Group variable: cid	Number of groups	= 15
R-sq: within = 0.2963	Obs per group: mi	= 9
between = 0.5676	Avg	= 9.0
overall = 0.5155	Max	= 9
	Wald chi2(3)	= 66.93
corr(u_i, X) = 0 (assumed)	Prob > chi2	= 0.0000

Table 17: Association between Development Expenditure, Own Tax revenue, Central taxes and Central Grants

De	Co efficient	Standard Error	Z	P > z	95% Confidence Interval
Cg	0.5498902	1.442884	3.81	0.000	0.8326902
Ct	0.2664967	0.0867352	3.07	0.002	0.4364944
Otr	0.5307719	0.0933319	5.69	0.000	0.7136991
-_cons	2.673454	0.8121342	3.29	0.001	4.265207

Source: State Finances: An Analysis of Budgets, RBI, Various issues

sigma_u | 1.075665 sigma_e | 68841808 rho |.70942562 (fraction of variance due to u_i)

The association between Central Grants, Central Taxes and Own Tax Revenue effort and Development Expenditure of the 15 States during the period 2005-06 to 2013-14 is positive and statistically significant. The association between Central Grants and Development Expenditure is stronger than the association between devolution of Central Taxes and Development Expenditure, as a major part of the Central Grants are for purposes of social and economic services. The association between Own Tax Revenue effort and Development expenditure is strong and the co-efficient is similar to that for central Grants. Since Own Tax Revenue effort is not linked to Development expenditure as Central Grants are, the positive and statistically significant association with the co-efficient as large as that for Central Grants indicates that the States are spending for Development Expenditure from Own Tax revenue effort.

8. CONCLUSION

The study looked at the fiscal policy indicators of Capital Outlay, Revenue Expenditure, Development Expenditure, Own Tax Revenue, Sales/VAT and Devolution to LSGs as a proportion of GSDP and ranks the States according to Fiscal Performance based on a weighted average of the ranks in these. The paper also analysed the disbursement of Central Grants and devolution of Central Taxes to States and their progressivity. The study found that the middle income States have on an average, except West Bengal, have performed better in own tax effort. Madhya Pradesh is an exception among low income States in own tax effort. In proportion of development expenditure, low income States have been ahead of all States average, but their per capita development expenditure is lower than other States. In devolution to LSGs Kerala, Madhya Pradesh, Tamil Nadu, Uttar Pradesh have done better than other States and are above the all States average.

All States, except Kerala, Punjab and West Bengal have more capital outlay of more than 80 percent of Fiscal Deficit. In the case of Kerala, increase in share of Capital Outlay is seen since 2006-07 when it crossed 40 percent. This implies that at the all States level, the utilisation of borrowed capital is for physical capital and infrastructure and not to meet revenue expenditure. It is to be noted that though many States have achieved surplus in the revenue account, there is substantial surplus in treasury of cash borrowed at high rates of interest, which gets reinvested in low yielding treasury bills of Government of India indicating imprudent cash management to comply with deficit targets.

This calls for more flexible targets for States in Fiscal Responsibility and Budget Management Acts (FRBMAs) rather than a rigid imposition of target of 3 percent of GSDP across all States

When the association between Own Tax revenue effort, devolution of Central Taxes and Central Grants were tested for statistical significance, it was seen that it is positive and statistically significant. A major part of Central Grants is disbursed for specific social and economic services, and it is expected that the association between it and development expenditure will be positive and significant. Though Own Tax Revenue Effort and devolution of Central Taxes are not for any specific purposes, their association with development expenditure is positive and statistically significant. This indicates the priority of the States for development expenditure.

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End Notes

[1]Capital Outlay is spending on investment in physical capital. Revenue Deficit is Revenue Receipts - Revenue Expenditure.

[2]Gross Fiscal Deficit comprises Revenue Deficit, Capital Outlay and Net Lending. Net Fiscal Deficit comprises Revenue Deficit and Capital Outlay.4 Even without a temporary counter cyclical need, increase in capital outlay can be growth inducing as it can help to relieve the infrastructural constraint.

[3]The Private Final Consumption Expenditure in GSDP is computed by Commodity Flow method and that in NSSO by field survey method. The private Final Consumption in

both includes imputed consumption and transfer payments received from the Government. Private Final Consumption Expenditure computed by NSSO has a) Expenditure on consumption goods and services, b) Imputed value of self-consumed produce of own farm or other household enterprise, c) Any household expenses reimbursed by employer (medical, electricity, LTC, etc.), d) Cost of minor repairs of assets & durable goods, e) All compulsory payments to schools and colleges including so-called "donations", f) Goods and services received as payment in kind or received free from employer (incl. imputed rent of quarters), g) Payments for medical care reimbursed or directly paid by insurance company, and h) Second-hand purchases of clothing, footwear, books, durables .As in GSDP, many of these cannot form part of the tax base. Even in consumption of goods and services, a part will have to be excluded as they form part of exempt sectors. The option of using NSSO's data instead of GSDP is handicapped by the fact that there is no yearly data for a time series. As prices differ across States, comparability of Private Final Consumption expenditure will inflate the tax base of a State with higher prices. As regards the suggestion of adding remittances to GSDP, this would inflate the tax base for the following reasons; a) A part of the remittances spent within the State would already have been reflected in the sub sectors of GSDP and adding remittances again will result in double counting and b) Remittances are in the nature of income and part of it is saved and a part is spent. Propensity to consume on taxable goods will have to be estimated. For comparison across States, we use GSDP at current prices as done by the Union Finance Commissions, despite limitations for want of better measure of tax base. Turnover of different commodities minus self consumption and inputs will be a better indicator for commodity wise tax base to measure tax.

References

Condoo, Dipankar, Amita Majumdar, Robin Mukherjerr and Chiranjib Neogi (2001): "Relative Tax Performances: Analysis for Selected States in India", *Economic Research Unit*, Indian Statistical Institute, Kolkatta.

Garg, Sandhya, Ashima Goyal and Rupayan pal (2014): "Why Tax effort falls short of capacity in Indian States : A Stochastic Frontier Approach", *Working Paper 032-2014*, Indira Gandhi Institute of Development research, Mumbai, August.

Government of India (2008): "Budget Highlights", finmin.nic.in.

Government of India (2009): "Budget Highlights", finmin.nic.in.

Government of India (2010): "Budget Highlights", finmin.nic.in.

Government of India (2011): "Budget Highlights", finmin.nic.in.

Government of India (2012): "Budget Highlights", finmin.nic.in.

Government of Kerala (2008-2011): "Budget Speeches", www.kerala.gov.in.

Isaac Thomas, Dr T M and R Ramakumar (2006): "Why do the States not Spend?", *Economic and Political Weekly*, Volume 41 No 48, December 2.

Panagriya, Arvind, Pinaki Chakraborthy and M Govinda Rao (2014): *State Level Reforms, Growth and Economic Development in Indian States*, Oxford University Press.

Purohit, Mahesh C (2006): "Tax Efforts and Taxable Capacity of Central and State Governments", *Economic and Political Weekly*, Vol 41, No 8, February 25-March3, Pp 747-755.

Raju, Swati (2012): "State Fiscal Capacity and Tax Effort: Evidence for Indian States", *Working paper UDE 39/2/2012*, February, Department of Economics, University of Mumbai.

Raychaudhuri, Ajitava and Poulomi Roy (2013): "Study Report on Estimating True Fiscal Capacity of States and Devising a Suitable Role for Granting debt Relief based on Optimal Growth Requirement", Sponsored by 14th Finance Commission, India, Centre for Advanced Studies, Department of Economics, Jadavpur University, Kolkatta, December.

Reserve Bank of India (various issues 2004 -2012): "State Finances an Analysis of Budgets."

Sen, Tapas K (1997): *Revenue Effort by Indian States*, No 5, National Institute of Public Finance and Policy, New Delhi.

Multidimensionality of Development – A Comparative Analysis of the States of India

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Abstract

Development is multidimensional and cannot be measured by economic performance or social progress in isolation. In this paper, development has been measured using five indicators including demographic, economic, social, health and infrastructure and resource indicators. A composite index was developed for various states of India using all the five indicators and then the states have been ranked on the basis of these indicators. It was observed that the states in south India have shown much better progress in development as compared to the rest of India. Correlation between the indices was also worked out to ascertain the interrelationship between various indicators. The results reveal that demographic push is an essential condition for economic development of any state. However, overall development had high correlation with health indicators. There cannot be a blanket recommendation for development of all the states development policies have to be tailored according to the strengths and weaknesses of each state.

Key Words: Multidimensional development, social development, economic development, development index.

1. INTRODUCTION

There is a paradigm shift in the global understanding of the issues related to the process of development from those related to economic growth to those of inclusion and equitable distribution. The basic objective of development is to create an enabling environment in which people can enjoy long, healthy and creative lives (UNDP 1990). Though the material welfare of the masses is an important indicator of development, it is not a sufficient indicator for the same. The trade-off between economic growth and social welfare has been a much debated issue. A country may show rapid progress in economic indicators but may still be facing the problems of inequitable distribution of

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resources and regional imbalances with regard to access to benefits. In this context, the pertinent issue is to what extent the current higher economic growth trajectory would enable the country's social indicators to improve. Income alone can miss a lot. For example, economic growth has been strong in India in recent years. In contrast, 42.5 percent of children under five are underweight, which is among the highest rates worldwide. The expenditure on education and health, as a percentage of GDP, is not improving and is woefully inadequate to sustain the achievements in these areas. This low level of social development naturally has adverse implications for broad-based economic growth (Sekhar 2005). For children, malnutrition can have life-long effects in terms of cognitive and physical development. Adults or children who are malnourished are also susceptible to other health disorders; they are less able to learn and to concentrate and may not perform as well at work (Alkire and Santos 2010).Hence, to address the issue of inclusion, it is essential that development parameters not just consider the economic indicators exclusively but also pay attention toward the inclusion of social and human development indicators. Development involves reducing inequality with a multidimensional view of demography, health, social well being, economic wellbeing and infrastructural availability. Besides, the more policy-relevant information are available on development parameters, the better-equipped policy makers will be to enhance it. For example, an area in which most people are deprived in education is going to require a different poverty reduction strategy to an area where most people are deprived in housing conditions.

Economic growth and social development may, but need necessarily not work in the same direction[1]. On one side, economic growth makes more and more resources available, which can be used both for individual and for social purposes; on the other side, it may be based on a substitution of private for social activities, which leads to social impoverishment. Conversely, a rich social environment may be good both for individual well-being and for long run growth, but it may also subtract resources to private growth-enhancing activities. The need to expand the development discourse beyond its focus on economic growth is universally accepted.

This paper tries to rank the Indian states in terms of various development indicators viz. demographic indicators, health indicators, social indicators, economic indicators and infrastructure and resource indicators and a composite development indicator including all of the mentioned indicators. India, which is the seventh largest country by area and second most populous country in the world, is governed under a parliamentary system consisting of twenty eight states and seven union territories. The states are administrative units having their own governments while union territories are administrative units that are ruled directly by the central government. However, the present analysis has excluded the union territories and north eastern states of India which are geographically and demographically small states formed at a later stage.

2. DEVELOPMENT INDICATORS

Development is a multidimensional process and its impact cannot be fully captured by a single indicator. A number of indicators when analyzed individually do not provide an integrated and easily comprehensible picture of reality. Hence, there is a need for building up of a composite index of development based on optimum combination of all the indicators. Composite indices of development have been obtained for different states by using the data on the following developmental indicators.

Demographic Indicators

1. Growth rate of population
2. Percent population below poverty line
3. Density of population
4. Sex Ratio
5. Crude Birth Rate
6. Percentage of Rural population to total population
7. Percent population employed

Health Indicators

8. Infant Mortality Rate
9. Crude Death Rate
10. Maternal Mortality Rate
11. Institutional delivery
12. Full immunization (12 to 23 months)
13. Full ANC
14. HIV prevalence among adults (15-49)

Social Indicators

15. Literacy Rate
16. Percentage of women employed to total
17. Percent share of female population
18. Unemployment/1000 pop.
19. Crime against /1000 women

Economic Indicators

20. State per capita income (Rs)

21. Per capita net state domestic product
22. Total liabilities of the state as percentage of total revenue receipt
23. Tax revenue as percentage of GDSP
24. Percent share of priority sector in total bank credit

Infrastructure and Resource Indicators

25. irrigation potential
26. per capita electricity availability KWh/person/year
27. Road length per 100 Sq. Kms. of area
28. Percent forest area

A total of twenty eight development indicators have been included in the analysis[2]. These indicators have further been classified into five major heads namely demographic, health, social, economic, and infrastructure/resource indicators.

3. METHODOLOGY

The composite index developed by (Prem Narain et. al 2009) was used for analysis in this study. There are several statistical methods which are used for estimating the level of development but most of these methods have their own limitations. The major limitation arises from the assumptions made about the development indicators themselves and their weightage in aggregate index. Keeping in view the limitations of different methods in estimating the level of development, the following statistical procedures are used in this study. Variables for different development indicators are taken from different population distributions and these are recorded in different units of measurement. The values of the variables are not quite suitable for combined analysis. Hence, the variables are transformed for the combined analysis as given below.

Let [*Xij*] be data matrix giving the values of the variables of i^{th} state, $i = 1, 2, \ldots n$ (number of states) and j^{th} indicator, $j = 1, 2, \ldots k$ (number of indicators).

For combined analysis $[X_{ij}]$ is transformed to $[Z_{ij}]$ as follows:

$$[Z_{ij}] = \frac{X_{ij} - \bar{X}_j}{s_j}$$

Where X_{ij} = mean of the j^{th} indicator

s_j = standard deviation of j^{th} indicator

$[Z_{ij}]$ is the matrix of standardized indicators.

From $[Z_{ij}]$, identify the best value of each indicator. Let it be denoted as Z_{oj}. The best value will be either the maximum value or the minimum value of the indicator depending upon the direction of the impact of indicator on the level of development. For obtaining the pattern of development C_i of i^{th} state, first calculate P_{ij} as follows:

$$P_{ij} = (Z_{ij} - Z_{oj})^2$$

Pattern of Development is given by

$$C_i = \sum_{j=i}^{k} \left(\frac{\mathrm{P_{ij}}}{(\mathrm{CV})_{\mathrm{j}}} \right)^{\frac{1}{2}}$$

$(CV)_j$= Coefficient of Variation in X_{ij} for j^{th} indicator

Composite index of development is given by

$$D_i = C_i / C$$

Where $C = \bar{C} + 3S_{Di}$

C = Mean of C_i

S_{Di} = Standard Deviation of C_i

Smaller value of D_i will indicate high level of development and higher value of D_i will indicate low level of development. The best value of each developmental indicator of the model states will be taken up as the potential target of that indicator for state A.

Limitation of the Study:

The study uses the states as the unit of analysis. However it is imperative to note that development doesn't follow any administrative or political boundaries. There are some deprived regions even within the richer Indian states, which have lower income and worse human development indicators.

4. RESULT AND DISCUSSION

4.1 Level of Development of States in various sectors

The composite indices were calculated for various sectors indentified on the basis of different indicators viz. Demographic, health, social, economic and infrastructure and resources. The states were ranked on the basis of the indices for each of these sectors. The indices along with the ranks of states is given in table 1.

Table 1: Composite Indices and Ranks of States

S.No.	State	Demographic		Health		Social		Economic		Infrastructure and resources		Overall	
		CI	Rank	CI	Rank	CI	Rank	CI	Rank	CI	Rank	CI	Rank
1.	Andhra Pradesh	0.34	1	0.46	10	0.53	8	0.55	11	0.71	10	0.61	5
2.	Assam	0.61	15	0.66	17	0.49	6	0.71	16	0.69	6	0.71	13
3.	Bihar	0.98	20	0.70	18	0.73	19	0.84	19	0.82	18	0.89	20
4.	Chattisgarh	0.65	17	0.62	14	0.49	5	0.52	8	0.71	11	0.69	12
5.	Gujarat	0.48	7	0.42	7	0.59	11	0.53	9	0.81	16	0.66	11
6.	Haryana	0.59	14	0.38	4	0.65	16	0.43	1	0.76	13	0.66	10
7.	Himachal Pradesh	0.40	4	0.39	5	0.49	4	0.48	5	0.67	4	0.57	3
8.	J&K	0.59	13	0.36	3	0.72	18	0.60	12	0.90	20	0.74	15
9.	Jharkhand	0.64	16	0.63	15	0.82	20	0.71	18	0.81	17	0.81	19
10.	Karnataka	0.38	2	0.39	6	0.35	3	0.46	2	0.75	12	0.58	4
11.	Kerala	0.48	8	0.09	1	0.26	2	0.46	3	0.48	1	0.42	1
12.	Madhya Pradesh	0.58	12	0.72	19	0.63	15	0.61	13	0.78	15	0.77	16
13.	Maharashtra	0.44	5	0.42	8	0.54	9	0.55	10	0.76	14	0.64	8
14.	Orissa	0.52	10	0.54	12	0.54	10	0.65	14	0.67	3	0.65	9
15.	Punjab	0.50	9	0.42	9	0.60	12	0.50	6	0.71	8	0.63	6
16.	Rajasthan	0.54	11	0.65	16	0.71	17	0.71	17	0.86	19	0.80	18
17.	Tamil Nadu	0.39	3	0.30	2	0.25	1	0.51	7	0.71	9	0.53	2
18.	Uttar Pradesh	0.76	19	0.76	20	0.62	14	0.68	15	0.64	2	0.77	17
19.	Uttarakhand	0.46	6	0.58	13	0.50	7	0.47	4	0.69	5	0.64	7
20.	West Bengal	0.66	18	0.50	11	0.61	13	0.94	20	0.70	7	0.74	14

Since independence, India has undergone a demographic transition. Demographic transition is the change societies undergo from a pre-modern regime of high fertility and high mortality to a postmodern regime of low fertility and low mortality as observed in the case of European and American population history during 1930s. This shift is typically seen from short lives and large families to where people tend to live longer lives and raise smaller families. In demographic trends, the performance of southernmost states is noteworthy. As far as the state-wise demographic indicators are concerned, the three states of Southern India viz. Andhra Pradesh, Karnataka and Tamil Nadu are at the uppermost tier of development. These states are characterised by a higher literacy rate and a more favourable sex ratio. The value of demographic index varied from 0.34 to 0.98. Uttar Pradesh and Bihar which are also incidentally the first and third most populous states of India were way behind the rest of the states in development in terms of demographic indicators.

As evident from the health indices, the gap between the best and the worst is significantly high, highlighting the differential development in health parameters. People of Kerala and Tamil Nadu showed improved health conditions as indicated by their composite health indices. However, the states that lagged in demographic indicators, also continue to lag the other states on most of the health parameters as well. The Health indices varied from 0.09 in Kerala to 0.76 in Uttar Pradesh. The basis of Kerala's impressive health standards is the statewide infrastructure of Primary health centres. Life expectancy at birth in Kerala is seventy five years compared to sixty four years in India and seventy seven years in the US. Female life expectancy in Kerala exceeds that of the male, just as it does in the developed world, Kerala's maternal mortality rate is eighty one (Census2011) for every one thousand live births, which is the lowest in India.

The desire to produce social indicators has been prompted by a growing feeling that economic statistics alone do not portray a complete picture of a country's development (King 1974).Most of the variables taken for analysing social development represent the status of women in the society. A society which ensures that its women are healthy, feel protected and are economically empowered is a developed society in true sense. The values of social indices suggest high interstate disparity in the social development in India. The composite social indices varied from 0.26 to 0.83. While Kerala, Tamil Nadu and Karnataka were the states which were in a much better off condition as far as the social indicators were concerned, Rajasthan, Jammu and Kashmir, Bihar and Jharkhand had a lot to improve on the social front. Andhra Pradesh, Kerala, Tamil Nadu and Chattisgarh are the only states where women contribute to at least fifty percent of the population and Kerala is the only state where forty percent of the total people employed are women. In Rajasthan, Bihar and Jharkhand, the rate of unemployment was very high as compared to the rest of the country. In Andhra Pradesh, Assam, Rajasthan and West Bengal, the crime against women was relatively higher.

In terms of purchasing power parity, India has become the third largest country in the world (ET Bureau 2014).Manufacturing, retailing and information outsourcing industries have been most important factor in driving growth in rich states. Haryana is on the top in terms of composite Economic index (0.43) followed by Karnataka (0.56). Higher dependence on agriculture and service sectors and a comparatively lower industrial base is one of the important reasons of Bihar and West Bengal lagging behind on this front. The fact that agriculture in the Low Income States (LIS) accounted for only a fourth of economic growth but more than half of employment growth is worrisome because it points towards declining labour productivity in the sector, and suggests that these states have been less successful in moving workers to more productive jobs in manufacturing and services than the Middle Income States (MIS) and High Income States (HIS).

The less developed states face one disadvantage in that they are all landlocked. Another observable feature of these low developed states is that except for arid regions in Rajasthan these states are well endowed in natural resources especially water, fertile soil and minerals. Despite abounding in natural resources, these states lack in infrastructure and human development. It is established that there is a strong positive relationship between infrastructure investment and economic growth (De la Fuente & Estache 2004). Village access to paved roads and rural-urban connectivity were particularly important for generating growth in agricultural productivity and non-farm employment, and in supporting urban development. Besides, infrastructure availability, particularly of power, is one of the most important factors determining industry location. The difference in availability of infrastructure has made a perceptible difference: states with better infrastructure in the 1980s experienced relatively faster growth during the 1990s (World Bank 2008).

The total development indices vary from 0.41 in Kerala to 0.88 in Bihar. Rajasthan, Jharkhand and Bihar are the low developed states in terms of overall development which are closely followed by Madhya Pradesh and Uttar Pradesh. Bihar and Uttar Pradesh are very populous states and are characterised by infrastructural deficiencies which result in poor market access for these states. However, in Rajasthan and Madhya Pradesh the development lag can mainly be attributed to their geographical constraints which result in low market access. Most part of Rajasthan is covered by the Thar Desert and most part of Madhya Pradesh is characterised by forests and hills which render these areas unsuitable for cultivation and also restrict their market access. In contrast, the state of Kerala has shown a more equitable distribution of economic resources. Kerala shows that a society characterized by a high degree of mutuality can be very resource efficient and attain a high quality of life (Basiago 1999).

4.2 Stages of Development

The states were classified on the basis of their stage of development as high, high middle, low middle and low. For relative comparison, it the states having the composite indices less than or equal to (Mean – SD) were classified in high developed category, the districts having the composite indices in between (Mean – SD) to (Mean) are in high middle level category, the districts having composite indices in between (Mean) to (Mean + SD) are in low middle level developed category and the districts having the composite indices greater than or equal to (Mean +SD) are in low level developed category.Table 2 presents the number of states along with the percentage area and population lying in different stages of development.

Table 2: Number of States and Percentage of Area and Population Lying under Different Stages of Development

Stage of Development	Number of States	Area (%)	Population (%)
Demographic Indicators			
High	3	18.16	18.01
High Middle	8	36.51	29.86
Low Middle	7	29.11	24.09
Low	2	10.19	25.07
Health Indicators			
High	2	5.14	8.72
High Middle	9	43.56	39.86
Low Middle	6	25.70	17.38
Low	3	19.57	31.07
Social Indicators			
High	3	10.97	13.77
High Middle	7	32.28	25.84
Low Middle	6	28.25	39.41
Low	4	22.46	18.01
Economic Indicators			
High	2	7.18	7.15
High Middle	9	37.79	35.79

Low Middle	7	43.43	37.96
Low	2	5.56	16.13
Infrastructure and resource indicators			
High	1	1.18	2.76
High Middle	10	38.44	48.84
Low Middle	7	37.17	38.72
Low	2	17.17	6.71
Total			
High	2	5.14	8.72
High Middle	9	40.46	35.58
Low Middle	6	32.67	35.76
Low	3	15.70	16.97

Table 2 reveals that in demographic trends the performance of southern states is noteworthy. Three states with a total of eighteen percent of the total population of the country were found to be in high developed group, covering around five percent of the total area. There were eight states that fell in the high middle group, covering around thirty percent of the population. Seven states were in the low middle and two in the low group.

Nine states contributing forty five percent of area and forty eight percent of population come under low and low middle developed health category. The health expenditure in the public sector is abysmally low in India whereas the proportion of health spending in the private sector is twice as high in India as in the "free market" USA (Pal and Ghosh 2007). This leads to accessibility of better health services to financially advantaged section of the society. Majority of the population does not have access to better medical facilities.

Social development is a key driver to human development. Low level of human and social development plays a key role in constraining growth and development of the lagging regions in India. Inclusion and empowerment of women and education plays a pivotal role in development of a state. The socially low and low middle developed states constitute fifty percent of the total area and fifty seven percent of the total population. The low socially developed states are Bihar, Jharkhand, Rajasthan and Jammu and Kashmir. These states consist of sizable number of scheduled caste and scheduled tribe population and poverty, illiteracy, ill health, malnutrition and unhygienic condition is high among these groups of population (Pattanaik 2006). A predominant feature of these states is stratification of the society on the basis of castes. The caste system, based on

occupational divide, segregates the society into high, middle and low castes. The high castes are mainly the land owners and the low castes are generally the service providers who have very less or no ownership of land. The lack of ownership of land also prevents them from taking institutional credit. Though the feudal system was abolished in 1952, it is still being practiced in states like Bihar. This discriminative system prevents the social upliftment of major sections of the society in these states.

Around fifty four percent of the total area of the country and forty four percent of the total population of the country fall the low and low middle category of infrastructure development. Infrastructural facilities in terms of access roads and availability of power and water are essential for development of a region. Electricity infrastructure also increases literacy, due to lighting that enables students to study into the night in addition to making use of technology (Bond 1999).Better infrastructural facilities attract more investment specially in industries which in turn have a positive impact on employment availability and other development indicators.

Differences in economic activity would be less problematic if people could easily migrate to better-off regions where the jobs are. Though there is evidence of labour migration from poorer states like Bihar and Uttar Pradesh to richer states like Punjab and Haryana, it has not helped much in curbing the poverty levels in the low economically developed states. This is majorly owing to distress migration of unskilled and semi skilled workers from these regions which reduces their employability in remunerative jobs. Kerala provides a dramatic contrast where there is high outmigration of well educated workforce who are able to find better jobs at the destination. Kerala economy is one of the biggest remittance economies in India.

The states which were in the low developed category (Bihar Jharkhand, Rajasthan) were those states that were more dependent on mineral and other natural resources whereas had low human development scores. This has also been found true for countries dependent on point resources or resources extracted from earth for instance the mineral resources. This is also termed as ‘resource curse’. Besides, these states have been also lagging in most of the other human development indicators as is evident from their ranks and values of various development indices.

4.3 Interrelationship between Indicators

Correlation between the indices was worked out to ascertain the interrelationship between various indicators. The figures indicate that any stand alone performance in respect of any of these indicators will not be sustainable. The interrelationship between various indicators is given in Table 3.

Table 3: Interrelationship between various indicators

	Demographic	Health	Social	Economic	Infrastructure and resources	total
Demographic	1	0.59	0.57	0.68	0.22	0.76
Health		1	0.60	0.56	0.35	0.83
Social			1	0.54	0.70	0.67
Economic				1	0.25	0.73
Infrastructure and resources					1	0.67
Total					0.67	1

An important revelation made by the interrelationship between various indices is that initial push to demographic achievement is a necessary condition for economic achievement as indicate by the maximum correlation of economic index with the demographic index (0.68). Development often leads to the dilution of social norms prescribing early marriage, and fertility rates within marriage decline as higher child survival rates, female education and labour market opportunities associated with development reduce the desired family size (Chandrasekhar et.al. 2006).The contrary is equally true that substantial economic improvement does not by itself ensure better social indicators. For instance, Haryana leads in terms of economic indices whereas in terms of social indices, it is placed in the bottommost position of the Low middle strata of development. Health indicators show a high correlation (0.60) with the social indicators. Tangible reductions in birth and death rates are not possible without significant improvement in literacy rates. Also, it is a well established fact that maternal health seeking behaviour is strongly influenced by women's social status and empowerment. Likewise, better infrastructural availability translate to better social conditions as is indicated by high degree of correlation (0.70) between the two indicators. A number of studies have also found basic infrastructure to have a strong impact on the efficiency of education and health facilities (Brenneman & Kerf 2002)For instance, better network of roads can help in providing better access to schools and colleges thus increasing the literacy rate. The degree of correlation between health indicators and total development is the highest 0.83.

Table 4: Present Value of Development Indicators in Low Developed States along with Potential Target

S.No.	Development Indicators	Low Developed States			Potential Target and Target States
		Bihar	Jharkhand	Rajasthan	
1.	Growth rate of pop.	2.26	2.04	1.96	0.48 (Kerala)
2.	% pop BPL	53.50	39.10	24.80	9.40 (J&K)
3.	Density of pop	1102.00	414.00	201.00	123.00 (Himachal Pradesh)
4.	Sex Ratio	916.00	947.00	926.00	1084.00 (Kerala)
5.	Crude Birth Rate	28.10	25.30	26.70	14.80 (Kerala)
6.	% of Rural pop to total pop	88.70	75.95	75.11	51.55 (Tamil Nadu)
7.	% pop employed	33.70	37.52	42.06	49.24 (Himachal Pradesh)
8.	IMR	48.00	42.00	55.00	13.00 (Kerala)
9.	CDR	6.80	7.00	6.70	5.70 (J&K)
10.	MMR	261.00	261.00	318.00	81.00 (Kerala)
11.	Institutional delivery	48.30	40.10	70.40	99.90 (Kerala)
12.	full immunization (12 to 23 months)	49.00	59.70	53.80	83.60 (Punjab)
13.	Full ANC	4.50	10.90	14.60	77.90 (Kerala)
14.	HIV prevalence among adults (15-49)	0.22	0.13	0.19	0.08 (J&K and Assam)
15.	Literacy Rate	63.82	67.63	67.06	93.91 (Kerala)
16.	% of women employed to total	5.20	7.50	17.40	40.10 (Kerala)
17.	% share of female population	48.00	49.00	48.00	52.00 (Kerala)
18.	Unemployment/1000 pop.	47.00	98.00	67.00	13.00 (Karnataka)
19.	crime against /1000 women	0.18	0.19	0.52	0.17 (Tamil Nadu)

20.	State per capita income (Rs)	20708.00	29786.00	42434.00	94680.00 (Haryana)
21.	Per capita net state domestic product	16119.00	30719.00	34189.00	78781.00 (Haryana)
22.	Total liabilities of the state as % of total revenue receipt	127.66	154.79	216.15	73.49 (Chattisgarh)
23.	Tax revenue as % of GDSP	4.53	5.36	6.41	9.50 (Karnataka)
24.	%share of priority sector in total bank credit	60.99	52.58	41.40	68.29 (Uttarakhand)
25.	irrigation potential	0.06	0.02	0.01	0.12 (Punjab)
26.	per capita electricity availability KWh/person/year	92.00	167.00	564.00	1376.00 (Punjab)
27.	Road length per 100 Sq. Kms. Of area	127.57	21.99	50.11	532.27 (Uttar Pradesh)
28.	% forest area	6.87	29.61	9.54	66.52 (Himachal Pradesh)

Table 4 shows the actual values of all the indicators of the low developed states along with the potential target values. The table also indicates the best performing state along with its actual values. It is evident from the table that for most of the indicators Kerala, Tamil Nadu and Karnataka have the best indicators. Among the states in the north of India, Punjab, Himachal Pradesh and Haryana have performed well in certain indicators. In case of Punjab and Haryana, it is the agriculture or rural sector which has performed exceedingly well and that is the secret of their economic development as well as that of lower proportion of poverty (Vora 2001). The Kerala model of development, based on the development experience of the southern Indian state of Kerala, refers to the state's achievement of significant improvements in material conditions of living, reflected in indicators of social development that are comparable to that of many developed countries, even though the state's per capita income is low in comparison to them[3]. Despite of not being a forerunner in the economic front, the state is characterised by high literacy rates, healthy citizens and politically active population.

5. CONCLUSION AND POLICY IMPLICATIONS

Broadly, the interstate comparison suggests that any stand alone performance with respect to any one of the indicators does not appear sustainable. A review of the results of this study suggests that there is no single recipe for development. Development

necessarily has to have a multidimensional view ranging from demography, health, social, economic and infrastructure. Among Indian states, the states of southern India have shown much better progress in development as compared to the rest of India. There are several factors that could facilitate development of lagging regions. Geography and endowments play a major role in enhancing economic activities of a region which will be higher in regions with better resources and better access to markets as in Kerala, Karnataka. Low and low middle developed states are either endowed with natural resources or high population densities or both. There is a need to harness the strengths of the states to work for development of these states. Hence, instead of a blanket approach of development for the country as a whole, comprehensive tailor made approaches to regional development taking into consideration the comparative advantages of the region and the constraints on its development could be an answer.

End Notes

1 Economic growth is defined as increase in an economy's output levels and development implies reduction in poverty, inequality and unemployment. Nowadays it is widely accepted that economic growth is a narrow concept and development is essentially multidimensional.

2 These indicators may not form an all inclusive list but these are the major interacting components of development.

3 Despite its achievements, the Kerala model is heavily criticised for the low industrial development in the state and high levels of unemployment. The educational reforms failed to make a direct mark on the state, as people tend to go abroad for monetary benefits.

References

Alkire, S & M. E. Santos (2010): "Acute Multidimensional Poverty: A New Index for Developing Countries", *OPHI Working Paper No. 38*, University of Oxford.

Basiago, A.D (1999): "Economic, social, and environmental sustainability in development theory and urban planning practice", *The Environmentalist* 19, 145-161.

Bond, S (1999): "Basic infrastructure for socio-economic development, environmental protection and geographical desegregation: South Africa's unmet challenge", *Geoforum* 30(1)

Brenneman, A& M. Kerf (2002): *Infrastructure and poverty linkages: A literature review*, The World Bank, Washington, DC

Bureau, E.T (2014):"India displaces Japan to become third-largest world economy in terms of PPP: World Bank", *The Economic Times*, April 30, Retrieved from http://articles.economictimes.indiatimes.com

Census India (2011): *Population Census 2011*, Government of India

Chandrasekhar, C.P, J. Ghosh & A. Roychowdhury (2006): "The 'Demographic Dividend' and Young India's Economic Future", *Economic and Political Weekly*, Vol. 41, No. 49, 09 December.

De la Fuente, A &A. Estache (2004): *Infrastructure Productivity and Growth: A quick survey*, The World Bank, Washington, DC

King, M. A (1974): "Economic Growth and Social Development: A Statistical Investigation", *Review of Income and Wealth*, 20: 251–272.

Naarain, P, S.D. Sharma, S. C. Rai and V. K. Bhatia (2009): "Inter-District Variation of Socio-economic Development in Andhra Pradesh", *Journal of Indian Society of Agricultural Statistics* 63(1), 2009 35-42.

Pal, P and J. Ghosh (2007): "Inequality in India: A survey of Recent Trends", *DESA Working Paper* No. 45, ST/ESA/2007/DWP/45

Pattanaik, B.K (2006):"Development and Livelihood – Are We Really Developed? – II", *Young Indian*, July 2006.

Sekhar, C.S.C (2005): "Economic Growth, Social Development and Interest Groups", *Economic and Political Weekly*, Vol. 40, No. 50, Dec. 10-16.

UNDP (1990): *Human Development Report 1990*, Oxford University Press, Oxford.

Vora, R (2001): *Socio Economic Profile of Rural India*, Concept Publishing Company, New Delhi.

World Bank (2008): "Accelerating Growth and Development in the Lagging Regions of India", Poverty Reduction and Economic Management South Asia, *Report No. 41101-IN*

Intellectual Property Rights & Conservation of Traditional Medicine Knowledge: The Kerala Experience

Geethika G*

Abstract

People across continents and communities have from time immemorial relied profoundly on traditional medicine knowledge (TMK) for all their medicinal needs. Traditional medicine knowledge has undoubtedly been acknowledged as the backbone of holistic health care and even modern medicine depends on this knowledge for timely innovation. For obvious reasons, TMK has become the much sought after intellectual property and conservation of such knowledge has become a case of concern for nations with rich biodiversity. Various international disputes in the post-TRIPS era can be quoted to reveal the gravity of the problem .India has, in the recent past, begun to approach the matter with due gravity and attempt is being made to adopt appropriate measures. . Interestingly, Kerala can boast of a rich and deep heritage of one of the oldest and widely popular treatment philosophy, Ayurveda, which is augmented by a broad TM knowledge and a wealth of biodiversity. This paper intends to discuss, in this context, the experience of the state of Kerala in conservation and promotion of TMK, by dwelling into the inter-linkages between TMK as knowledge of the commons and a commodity under the new IPR regime.

Key Words: Traditional Medicine Knowledge, Intellectual Property Rights (IPR), TRIPS, CBD, Ayurveda, Jeevani, TBGRI, IPR Policy of Kerala, TKDL.

1. INTRODUCTION

Biodiversity is undoubtedly one of the most precious assets of any country and it assumes unprecedented value when this natural resource holds potential to be transformed to knowledge that can save lives. One aspect of biodiversity related TK that has contributed significantly to the survival of humanity has been the traditional

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medicine knowledge, the rightful application of which could prevent, treat and cure illnesses.

The world market for herbal medicines based on TK had reached US$ 60 billion in 2008 and was estimated to have grown to US$ 100 billion by 2015 with an annual growth rate of 15%, according to a World Bank report. The World Health Organisation (WHO) ascertains that the use of conventional drugs will soon be overtaken by herbal remedies, by two to three times (WHO 2014). Three features can be pointed out as the reason for this broad use: accessibility and affordability of herbal medicines in developing countries; increasing popularity as an alternative approach to health care for many debilitating chronic diseases, including HIV/AIDS; and low cost of production.

As the popularity of medicines based on TK is increasing, the developing countries, which possess rich biodiversity and rich heritage of invaluable TK, are facing some grave concerns with multi-dimensional implications. Biodiversity related TK has been developed and protected through generations by indigenous communities but the modern legal norms of intellectual property rights (IPR) propagated by the Trade Related Intellectual Property Rights (TRIPS) Agreement does not recognise community efforts and alienates these communities from this knowledge which not only is detrimental to the survival of the communities but also affects the protection and promotion of such knowledge. Another very precarious implication of this ambiguity is the adverse effect on the public health sector of developing countries which rely extensively on such alternate treatment systems to meet the health needs of the poor.

For countries like India, the inconveniences in suitably ascribing IPR to products developed from biodiversity related TK and assigning its ownership to individuals is a taunting issue. Various international disputes in the post-TRIPS era can be quoted to reveal the gravity of the problem. Interestingly, Kerala can boast of a rich and deep heritage of one of the oldest and widely popular treatment philosophy, Ayurveda, which is augmented by a broad TM knowledge and a wealth of biodiversity. So, invariably, Kerala is keen on devising strategies to resolve the twin issues of protecting the TM knowledge and preventing a public health crisis.

A conceptual and factual analysis of the inter-linkages between the community and biodiversity oriented traditional medicine knowledge and market and commodity oriented IPR regime is necessary for developing countries to not only protect their resources but also manipulate the system to help their indigenous communities to reap benefits out of their common knowledge. This paper proposes to study the nature and scope of constituting traditional medicine knowledge as intellectual property and the steps to be taken by the country and the state of Kerala, in particular, to protect and promote this knowledge.

2. CONSERVING TRADITIONAL MEDICINE KNOWLEDGE: AN OVERVIEW

Traditional knowledge (TK) is defined as "a cumulative body of knowledge, know-how, practices and representations maintained, developed and passed on by people with extended histories of interaction with the natural environment. These sophisticated sets of understandings, interpretations and meanings are part and parcel of a cultural and spiritual complex that encompasses language, naming and classification systems, resource use practices, ritual, spirituality and worldview" (WIPO 2010).

"Traditional medicine" (TM) refers to various indigenous medicines, medicinal systems and all medicinal practices, including traditional Chinese medicine, Indian Ayurveda and Arabic Unani medicine, which are significantly different from allopathic medicine (Sahai 1996). It may be codified, regulated, taught openly and practised widely and systematically, or may be highly secretive, mystical and extremely localised and passed on orally. In either case, it benefits from thousands of years of experience, trial and incremental refinement. WHO acknowledges that traditional medicine is adopted by common man across the world as a complementary medicine (WHO 2014).

In today's knowledge economy, individuals and corporates are in a race to tame and frame even the most trivial bit of knowledge within the ambit of one of the seven intellectual property areas listed in the TRIPS Agreement and thereby claim exclusive ownership privileges over any innovation generated out of that knowledge. There is a lot of demand for claiming intellectual property rights over traditional medicine knowledge also. Pharmaceutical corporates are eagerly pursuing ways to commodify various therapeutic cures and remedies, related materials, traditional methods and ideas for making new medicines. But this exploitation has created a very serious problematic for the protection of biodiversity and the rights of the indigenous communities because of the inherent anomalies in handling TK through the dictates of the new IPR regime.

The central concern arises from the failure in balancing human right notions about community-based sharing and accessing biodiversity resources vis-à-vis property rights of the individual 'inventors' of products based on the traditional medicine knowledge. Many cases of patenting have shown how indigenous knowledge is exploited by corporates without sharing any ownership rights or commercial benefits with the country or community of origin. Occurrences of commoditisation of such 'secret or sacred' collective resources not only points to disrespect for local culture, but are violations of human rights. Another significant problem is the failure to understand and gauge the contributions of indigenous people in helping conserve the world's biodiversity and related medicine knowledge. Bioprospecting and biopiracy are emerging to be serious threats for future and has many legal consequences.

The biggest challenge faced by indigenous communities, human rights and environmental activists, as well as biodiversity rich developing countries is the lack of appropriate international guidelines and national regulatory mechanisms to protect such knowledge resources. Only 25 of WHO member states have a policy on traditional medicine. International and national standards fail to ensure quality, efficacy and safety of therapies and products. The noteworthy rationale is that dealing with TM invariably relates to not only property rights, but also issues of preservation of biodiversity and, promotion of cultural heritage and technology transfer (WHO 2014).

Similar to modern medicines, traditional medicines are composed of both tangible and intangible resources, which primarily include the biodiversity of the state and the centuries old heritage of valuable knowledge base (Nair 2005). Translating this into the language of contemporary IPR regime and the applicability of patents on traditional medicine knowledge is questionable. The two important international instruments that form the basis for all discourses on the legalities of seeking intellectual property protection for traditional knowledge are the TRIPS Agreement and the Convention on Biological Diversity (CBD).

Traditional Medicine Knowledge as Intellectual Property: TRIPS versus CBD

The TRIPS Agreement has been drafted to offer patent protection for pharmaceutical products coming under the regimen of modern medicines and the strategies are appropriate to achieve the objective. One can put forth stern arguments that TRIPS does not intend to cater to protection of traditional medicine knowledge, nor does it acknowledge indigenous, community-based knowledge. It simply overlooks the close association between biological and genetic resources, and the therapeutic knowledge of local and indigenous communities. Thus, India being a rich haven of both biodiversity and traditional knowledge, as well as a true beneficiary of this stream of therapeutic system, we must initiate a careful assessment of the objectives and possible implications of IPR protection of TM, as implied by the TRIPS regime.

A cursory reading of TRIPS gives the impression that biodiversity related traditional medicine knowledge is excluded from patentability because under Article 27.3 of TRIPS life forms are excluded from patentability. Further, traditional knowledge lacks novelty and inventiveness because of being in the public domain forever; do not entail to be qualified as patentable (Chaudhary 2012). But, in reality, what went unnoticed by the developing countries is that patentability is open to novel and unique extraction processes of medicinal plants as well as innovative applications of chemical compounds derived from the natural materials; so also, novel and synergistic combinations of plants and/or their extracts. The US and European patent offices have issued many such patents (Nair 2005). Sanskrit classics illustrate that for centuries, people of the Indian peninsula have benefitted from the medicinal properties of Neem (as

an antidiabetic), the Indian Ginseng or Aswagandha (as an antitumour agent), and Turmeric (as an anti-infective, anti-inflammatory and antidiabetic) (Padma 2005). The U.S. patent office not only granted patent for medicinal components from aforesaid products but also for the anti-diabetic properties of bitter gourd or *karela, jamun (Njaaval Pazham), brinjal,* Phyllanthus amarus (keezhar nelli), Rauwolfia serpentine (sarpagandhi), Tulsi (Neetika, Amrtyo, Saroch & Smita 2014). Many other developing countries also faced such indiscriminate patenting off of indigenous knowledge by foreign entities.

Another problem that remains unresolved is with respect to recognising and assigning collective rights. The TRIPS Agreement approves conferring rights to individuals and corporates and therefore developing countries intending to protect their biodiversity related traditional knowledge is left clueless about a strategy to consolidate and assign collective/communal rights to an individual or institution. All such attempts have caused a lot of unease and dissatisfaction amongst the indigenous communities due to inappropriate benefit sharing mechanisms and related exploitations. In all the above mentioned cases neither any attempt was made to seek Prior Informed Consent nor any Material/Information Transfer Agreements were drawn (Sahai 1996). Thus, on a broader spectrum, it is clearly comprehensible that the contemporary IPR regime recognizes individual, not collective rights and, therefore, does not intend to provide any substantial protection for TK and community resources (Arihan & Ozkan 2007).

Yet again, we have thus far overlooked the risk of extinction arising out of overexploitation of biodiversity to meet industrial and/or export demands. This further necessitates the setting up of a broad policy framework that would promote conservation and sustainable use of biological resources, including regulation of trade in products developed from traditional medicine knowledge.

Hence, it is beyond doubt that conservation is crucial (Tilburt & Kaptchuk 2008). While the TRIPS Agreement does not provide the suitable arrangement for the proper management of these knowledge resources, the developing countries are leaning a lot towards the Convention on Biological Diversity to formulate legal frameworks to protect traditional medicine knowledge.

The Convention on Biological Diversity (CBD) was born off the 1992 Rio Earth Summit and it stands as an open challenge for TRIPS, being the only international convention that asserts the rights of the indigenous communities to biodiversity in order to protect their knowledge. The Convention recognizes biological diversity as an amalgamation of flora, fauna, micro organisms and their ecosystems, and acknowledges the need of the people to depend on biodiversity in order to meet their requirements of food security, medicines, fresh air and water, shelter, and a clean and healthy environment in which to live (CBD 1992).

Two articles of CBD (1992) need to be mentioned to highlight its standpoint:

Article 8 (j): *"State parties required to respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional life styles relevant for the conservation and sustainable use of biological diversity and promote the wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices".* Article 18.4: *"Contracting parties should encourage and develop models of cooperation for the development and use of technologies, including traditional and indigenous technologies."*

Distinct from the patent system, a unique feature of the CBD is that it provides a protection mechanism for biodiversity, including medicinal plants. It tries to establish a multilateral framework for the harnessing of pharmaceutical value of biodiversity (Articles 8, 15, and 16) and proposes "equitable returns" and "benefit sharing arrangements" in order to ensure that some benefits of this exploitation come back to source nations and source communities in the South. CBD keenly persuades benefit sharing as a nonmarket tool to compensate knowledge holders and is essentially crucial in bio-prospecting ventures (Reddy 2006).

The benefit-sharing arrangements include: (a) inclusion of indigenous communities in a joint ownership of IPR; (b) appropriate transfer of technology between the stakeholders; (c) ensuring the betterment of the benefit claimers while locating production, research and development facilities; (d) providing opportunities to Indian scientists, benefit claimers and the local people to access research and development in the biological resources, bio-surveys and bio-utilization; and finally (e) devising mechanisms to promote direct payment of monetary compensation and other non-monetary benefits to the benefit claimers (Dewan 2010).

The contracting parties of CBD have every right to compile legislations to protect biodiversity and the flexibilities granted by the TRIPS Agreement allow countries to take appropriate steps to protect their public health sector. The benefit sharing mechanism and Prior Informed Consent are two very powerful strategies of use to developing countries. Translating these concessions into legislations would ensure fail-safe mechanism for tackling issues related to traditional medicine knowledge. But, in reality, developing countries are constrained by many factors, including failure of political entity due to ignorance and unbearable pressure from corporates, and are yet to evolve suitable mechanisms to balance all the concerned elements of the issue (WHO 2014).

Today the strategy is to create awareness among the developing countries to tactically approach the issue and devise methods to protect and preserve the resources as well as attempt to help the indigenous communities to commercially benefit from the knowledge. So, the scenario asks for a concerted effort to apply IPR on TK based herbal drugs through the application of a combination of appropriate elements from the TRIPS Agreement including copyright, trademark, trade secret and also various restrictive clauses under the CBD, the Plant Varieties Protection and Farmers' Rights Act (PVPFRA), Geographical Indications (GI) Act and one or more pro-active 'Sui generis' legislations or a combination thereof (WHO 2014). A lot of hurdles appear at each stage because of the ambiguities in the IPR regime and various international organisations like the WHO are trying to help developing countries in this venture.

The following sections shall discuss the Indian standpoint on the subject of protection of traditional medicine and associated biodiversity. First, the legislative provisions for traditional medicine knowledge protection are dealt with following which India's policy on traditional medicine is analysed.

3. TRADITIONAL MEDICINE KNOWLEDGE PROTECTION IN INDIA

One of the areas where the diverse indigenous traditional knowledge has made tremendous contribution for the betterment of the quality of life is in the primary health care sector. Based on the degree of incorporation of TM into national health care system, WHO categorises India as a country with an 'integrative system' (WHO 2014). Anyone conversant with the public health sector of India would substantiate that up to 80 percent of the people use some form of TM, including Ayurveda, exclusively or in combination with Western medicine. Ayurvedic practices include the use of herbal medicines, plant-based treatments, animal products, mineral or metal supplementation (*rasa shastra*), surgical techniques, opium, and application of oil by massages. (Neetika et.al. 2014).

In the recent past India has witnessed instances of increase in the number of patent applications related to traditional medicines. According to the Indian Patent Office, till 2013, 28 out of 86 applications filed by foreign entities were granted patents, while 93 out of 523 applications filed by Indian entities were granted patents for products, formulation, compositions & processes in the field related to traditional ayurvedic medicine, medicinal plants and herbal based formulations (PIB-GOI 2013).

In spite of such instances, one cannot confront the argument that, the awareness and acceptance in India is inadequate with respect to the recognition of indigenous knowledge as a raw material that can be converted to valuable products that will high price in global market. In spite of realising the significance of this knowledge, we lack in a clear and exclusive legal mechanism to protect biodiversity and cultural resources. It was the obligation to adhere to the contrasting guidelines of the CBD and the TRIPS that

led Indian policymakers to study the problems and devise mechanisms for the protection of traditional knowledge in India (Gopalakrishnan 2002).

Traditional knowledge protection is not directly addressed in the Constitution of India. Yet, some of the articles, especially those under the Directive Principles of State Policy, can be interpreted to accomplish the protection. Article 48(A) calls upon the States to devise strategies to protect and improve the environment and safeguard the forests and wildlife of the country. Similarly, Article 51 (A)(g) points out that the protect and improve the natural environment, including forests, lakes, rivers and wildlife is the duty of the people of the country. In addition, Article 371 envisages special protection to the cultural identity of the tribal population in India. Schedule VI of the Constitution also supports the scope of separate Autonomous Councils by tribal communities for self-governance in accordance with their customary laws in areas of their dwelling (Kuriakose 2006).

The national policy on TM, along with laws and regulations, was introduced in India in 1940 and was updated in 1964, 1970 and 1982 In addition, various expert committees have been constituted from time to time since 1962. India has also taken significant effort to encourage research in TM. The first step in this direction was the Central Council of Indian Medicine, established in 1970. India also has two multi-volume national pharmacopoeias, the *Ayurvedic Pharmacopoeia of India* and the *Unani Pharmacopoeia of India.* Both are considered to be legally binding (Kuriakose 2006).

In consonance with the provisions of the CBD, India put together the Biological Diversity Act (BDA), 2002 and the Biological Diversity Rules, 2004. Under this Act, "a foreigner or even a citizen is prohibited from obtaining any biological resource occurring in India or knowledge associated thereto for research or commercial utilization or for bio-survey or bio-utilization without the prior approval of the National Biodiversity Authority (NBA)" (BDA, Chapter II, Section 3). Further, in Section 6, it says that prior approval of NBA is mandatory for proceeding with any patent application, except for those concerning new plant varieties.

As per Section 19 of BDA, the NBA has the power to give prior informed consent along with the terms and conditions of the use, including benefit sharing. But, reading Section 7 reveals that local people and communities of the area, including growers and cultivators of biodiversity and *vaids* and *hakims* (indigenous doctors) who have been practicing indigenous medicine are exempted (Kuriakose 2006). The NBA gets powers from the Act to take action to oppose the grant of IPR if and when bio-piracy occurs. [BDA, Chapter IV, Section 18(4)] (Gopalakrishnan 2002). Yet, one has to point out that the Biodiversity Act is insufficient to protect our traditional knowledge, which as we know is an intricate combination of both tangible and intangible resources.

The Indian Patent Act, when amended in 2002, acknowledged the value of intangible traditional knowledge and incorporated provisions that disallow the patenting of TK. Under Section 3 (p) of the Indian Patent Act, "an invention which in effect is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components" is not patentable. Section 10(d) (ii) "mandates the disclosure of the source and geographical origin of the biological material in the patent specification when the invention claimed is based on biological material". These provisions however do not prevent granting of patent to new products and process based on traditional knowledge (Chaudhary & Singh 2012).

It is in this context of disharmony between legislations regarding conservation of biodiversity and propagation of IPR that some of the experiments conducted in Kerala that acquire global attention. In spite of all flaws, these initiatives deserve consideration so as to help the nation to build new models for conservation of traditional medicine knowledge.

4. CONSERVING TRADITIONAL MEDICINE KNOWLEDGE OF KERALA: NEW AVENUES

Ayurveda (33.2%) forms a significant share of the total health spectrum of Kerala. Kerala has the second largest number of ayurvedic manufacturing units (12% of total manufacturing units) next to Uttar Pradesh. Apart from Ayurveda, there is a strong and vibrant oral healthcare tradition existing in the countryside, villages and tribal habitats. Kerala, with this living tradition of Ayurveda and other oral health-care traditions, can cash on this opportunity by establishing production centres for herbal health care products, confirming to specifications prescribed by WHO and other European Pharmacopoeias (TBGRI 2002). Understanding the potential of the scenario, thrust should be given to setting up of R&D centres in collaboration with world's top medical institutes, and pharmaceutical and medical technology firms to work towards developing new therapies and technologies (KPP-GOK 2013).

Acting upon the strategy proposed by CBD, Kerala has the credit of being one of the forerunners in having attempted some very innovative tactics to tackle the problems related to protection of TM and promotion of interests of indigenous communities without compromising on the preservation of biodiversity. The benefit sharing system was successfully put to practice by Kerala with respect to 'Jeevani'. Similarly, documentation of knowledge and thereby protection and utilisation is also being initiated as an ideal alternative to preserve TK and biodiversity. So, if Kerala could find solutions to the basic questions about who owns the intellectual property on the medicine (community that provided the traditional knowledge or scientific researchers); how to share the benefits of use of traditional medicines; and how can we prevent the possible loss of biodiversity in the process of widespread marketing of the herbal products, we

could attempt to utilise our rich traditional medicine knowledge in favour of public health.

The Case of Kerala Model of Benefit Sharing & 'Jeevani'

The '*arogyapacha*' plant indigenous to the forests of Kerala is an excellent illustration of the potential opportunities and challenges arising out of implementation of benefit-sharing agreements. The berries of the '*arogyapacha*' plant had been used for generations as a medicine for fatigue by the *Kani* tribal community, a small population of tribal people inhabiting around a few (30) settlements/villages in the forests of the Agasthiyar hills of Western Ghats in Kerala (Arihan & Ozkan 2007). Interestingly, even the scientists of TBGRI who had earlier documented this species were unaware of the traditional use and special properties of its fruits until they accidently witnessed the tribals using it to overcome exhaustion from long hours of trekking. Following experiments it was found that the leaves also share those special properties. By 1994, using '*arogyapacha*' ('Trichopus zeylanicus') as the key ingredient, a scientifically validated, standardised herbal formulation named 'Jeevani' was formulated by TBGRI under the leadership of Dr. Pushpangadan (Paul 2009). The commercial formulation, classified as a drug for promotion of health, contained *arogyapacha, ashwagandha, shankhpushpi* and *pippali* (Dewan 2010).

Based on the *Kani* know-how, patents were filed. In 1996, an India based ayurvedic pharmaceutical manufacturer, Arya Vaidya Pharmacy Ltd (AVP), was given the license to manufacture and market 'Jeevani' for a period of seven years against a licence fee of Rs. 10,00,000/-, and for a royalty of 2 % on ex-factory sale of the product. Also a benefit sharing arrangement was established to give the *Kani* tribes fifty percent of the licence fee as well as royalties from sale (Arewa 2006). The 'Kani model of benefit sharing' received the UN's first Equator Initiative Prize of 2002, for the sustainable utilisation and sharing of Kerala's biodiversity (Paul 2009). The initiative was undoubtedly one of its kind the world over and it helped increase the awareness of indigenous communities, like the *Kani,* about the value of their own knowledge (Gupta 2002).

Though the Kerala Model of Benefit sharing has been applauded world over, there have been some glitches in the continuation of the initiative. When the seven year licence period ended in 2002, the AVP and TBGRI did not renew their deal. The obstacles in pursuing the initiative are multifaceted.

Firstly, a very serious issue with respect to the patent application was that it did not specifically mention the knowledge possessed by the Kani about *arogyapacha,* though it describes that the therapeutic effect of this plant has been established by detailed pharmacological studies and even specifies that 'the physical appearances and

characters of this plant matches well with the description of 'Varahi' described in Susrutha Samhitha (Paul 2009). The Kani were excluded from the patent applicants' list and were not encouraged to participate in the R&D process of the product formulation.

The scientists proceeded beyond the Kani knowledge about *'arogyapacha'* and experimented on the anti-fatigue activity, anti-stress activity, hepato-protective activity, immuno-modulatory activity and so on. Going beyond the cultural context of the Kani people, a subjective experience of quenching hunger was translated into an objective condition such as immuno-modulation or anti-fatigue effect. These experiments alienated the indigenous community from any product thus formulated and the failure to take them into confidence made them feel exploited (Paul 2009). The Kani people soon realised that they were merely limited to the role of cultivators of the plant in the forest and this greatly offended them, leading to occasions of dissent and non-cooperation.

Secondly, the process patent expired in 2005 and was not renewed. Also, no attempt was made to attain a global product patent or an international trademark (PIB-GOI 2013). To aggravate the situation, some companies in the United States tried and succeeded in commercialising the 'Jeevani' trademark. While NutriScience Innovations LLC Ltd registered Jeevani as Trade Mark bearing a serial no. 75692281 under the US trademark rules, the Great Earth Companies, Inc., secured trademark rights for 'Jeevani Jolt'(Reddy 2006). But, astonishingly, all these misappropriation of the product could be stalled if an international patent application for 'Jeevani' is filed under the PCT.

Thirdly, the cultivation and collection of the plant also faced an unforeseen challenge. Studies revealed that the plant and its therapeutically active principles are habitat-specific. This delicate nature of the plant obviously hinted at the possibility of loss of the species from overexploitation and the government had to step back from all large scale commercial ventures (Arewa 2006).

Finally, the benefit sharing mechanism did not clarify the conditions of the state-sponsored schemes of heritage compensation, especially regarding whose heritage were we compensating and complications arose when the forest department began demanding share of the license fee and royalties on the grounds that the plant material collected is endemic to the forest!

However, with such all issues the TBGRI-Kani model is claimed to be unique and post-facto claimed to be the only known case where Article 8(j) and Article 15 of the CBD was fully implemented. The TBGRI-Kani model has been internationally acclaimed as a pioneering model in benefit sharing. The model has taught us some valuable lessons in applying benefit sharing mechanisms on traditional knowledge. In designing protection mechanisms for traditional medicine knowledge, three important

issues need to be addressed: (a) equitable sharing of the benefits of commercialisation of the knowledge?; (b) equitable protection of IPR of the holders of the medicinal knowledge and the producers of modern drugs; and (c) conservation of biodiversity while meeting the demands of a rapidly expanding international market for herbal products?.

"Neeru vatti": Anti-diabetic Drug Patented by Kerala Tribal

In 2001, Mr. Eashwaran Kani Vaidyar, a tribal healer of Elanchiyam, near Palode, in Thiruvananthapuram, was granted India's first patent for tribal medicine by the National Patent Office in New Delhi. The patent was for an anti-diabetic drug developed from the roots of a small-size tree, "neeru vatti" or "chembra valli" (Mukundan 2001).

This case is unique for the reason that even though the research and trials were conducted by Regional Research Laboratory at Thiruvananthapuram of Council for Scientific and Industrial Research (CSIR), the Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, and the KIRTADS, through a Memorandum of Understanding, these three parties agreed to apply for the patent in the name of the tribal who helped the scientists in accessing the indigenous knowledge and tribal medicinal recipes. By doing so, the entire profits from their commercial exploitation will go to the tribal communities (Paul 2009).

While both 'arogyapacha' and 'neeru vatti' are two success stories of Kerala's efforts to protect and promote its traditional medicine knowledge using the mechanisms of IPR, we have also had some setbacks. The most shocking was the find that a Japanese company, Dai Nippon Sugar Co. had managed to get a global patent for a blood sugar inhibiting medicine from 'chakarakolly', another traditional medicine.

IPR Policy of Kerala, 2008

In the past, due to lack of awareness among the original inventors and communities about TK protection mechanisms and insufficient attention given by the government, Kerala had lost several of its TK rights on healthcare, food and food supplements, as well as on designs and cultural properties. To overcome this drawback, Kerala government implemented the Kerala Traditional Knowledge Protection Policy (commonly known as IPR Policy), in 2008 (*vide* Government Order (P) No. 4/2008/Law) (KSCSTE 2008).

The Policy came under multiple levels of criticism. Primarily, the document was beyond the constitutional legislative powers of the state and therefore it was not a legal document. It was not exhaustive in its content and only puts forth an overview of the government's observations about certain selected IPR issues of importance for Kerala,

while assessing the parameters of national legislations such as the amended Indian Patents Act (2005) and the Biological Diversity Act (2002) (Patnaik 2008). A study of the Policy is relevant for various reasons.

Kerala can boast to be the only state in India to have published a State IPR Policy. The Policy has to be appreciated since it dealt with three basic practical issues with regard to IPR and the first and the most important issue addressed was that of protection of 'traditional knowledge', especially Ayurveda. The IPR policy suggests an unconventional legal arrangement for preventing unjust exploitation of traditional knowledge. It attempts to implement an 'open-source' model on traditional knowledge protection. Accordingly, the knowledge and practices will fall into the domain of "knowledge commons" where its commercial use will be permitted through negotiations with the existing right-holder and all additions of knowledge will have to be put back into the "commons" (Patnaik 2008).

The Policy distinguishes traditional knowledge into two realms. One set of knowledge refers to that which is the "preserve of particular communities, especially tribal communities, or particular institutions, families, often located in specific regions, and passed down from one generation to the next" and the other set of knowledge is that which sustains the livelihood of many persons across the state, which does not have a specific custodian or family in charge of it. To illustrate this distinction, the Policy refers to the famous Kotakkal massage in Kerala as knowledge belonging to the first category and the daily practice of Ayurvedic medicine by numerous practitioners across the state as belonging to the second category (Section 3) (KSCSTE 2008).

Further, the policy refers to two categories of right-holders: i) community or family custodian of knowledge and ii) where there is no specific custodian of knowledge, the State of Kerala "is deemed to be the right-holder." Thus the policy attempts to protect traditional knowledge, including traditional medicine, as a publicly owned asset by categorising it into the "knowledge commons" and not to the "public domain" (KSCSTE 2008).

As far as the exercise of the property right is concerned, the right-holders have the right to the brand name and commercial use of the knowledge. Everybody else who wishes to use this knowledge will have to do so under a "commons license" (Section 4). The use of the "commons license" explains the system of "knowledge commons" envisaged by the Policy. If any development occurs in the course of use, then under the conditions of the license, such a development will have to be put back into the traditional knowledge "commons" and cannot be patented anywhere (Section 7). Furthermore, it must be noted that the "commons license" system is for non commercial purposes. In such circumstances where commercial use is desired by non-right holders, a scheme

similar to open source licensing has been devised wherein the terms and conditions are to be negotiated between right-holder and the potential user (Basheer 2008).

The policy also proposes the setting up of a Kerala Traditional Knowledge Authority (KTKA) to address the question of enforcement and monitoring of rights. The Authority, funded by the State government, will be administered by a Board consisting of a Chairman and four members. At least one of the members should belong to the TK community and another from the scientific community (Section 6). Also, it urges all traditional practitioners of TK to register with the KTKA, so that it can serve them negotiating terms with other possible commercial users (KSCSTE 2008).

Although the Policy and its principles appear contemporary, it has been observed by many that this open source concept will not work as successfully for community/family owned traditions as it might work for the second category of right-holders, i.e., Kerala in general. The reason for such an observation is the suspicion that the policy does not offer sufficient incentives for the families/communities to disclose their closely held, 'trade secret like' knowledge. While the policy states that such knowledge can be freely used for non-commercial purposes by all residents of the state, it also refrain the right-holders from patenting any 'improvement' or advancement of the knowledge. In either case, the right-holder is deprived of capturing maximum benefit from commercially exploiting the knowledge (Patnaik 2008).

The policy seems to view attempts to commercialize traditional knowledge, "outside the circle of traditional users" (Section 11) with some degree of suspicion and seeks to subject them to higher levels of authorization for use. The policy clearly transmits the message that the corporate industry must be kept bay from commercially exploiting our traditional knowledge and hence, it assumes that state control over traditional knowledge is the best form of regulation (Nair 2008).

Yet another question relates to the ownership of knowledge like Ayurveda which is not confined to Kerala and therefore the state cannot arrogate to itself all rights over it. Similarly, not much has been mentioned about ways to pacify the concerns raised by situations where a third party from outside the state will also get opportunity to inspect, use and even patent our knowledge, once the traditional knowledge register is open for public inspection. A peculiar characteristic of Ayurveda as a knowledge system is that the absence of legal property rights over ayurvedic knowledge could lead to excess private misappropriations (Basheer 2008).

Given the fact that the Constitution bestows the Centre with exclusive authority to legislate in this area, this move by a State is bold and non-traditional. Oddly enough, India is yet to work out a domestic regime in this regard. Experts point out that, if the

thrust is on 'trade' of traditional knowledge products, it could well claim exclusive competence under entry 26 of the state list (Nair 2008).

The Kerala IPR Policy is a bold and laudable initiative by the Government of Kerala to resolve the issues concerning protection of Ayurveda. Similarly, in accordance with the guidelines of the World Intellectual Property Organization initiatives have been launched to codify and prepare database of manuscripts and texts. Codification, while enabling identification of traditional knowledge, prevents direct misappropriation (Nair 2008). The Kerala IPR Policy, with its focus on TK, indicates economic considerations like setting up terms of use, innovation and common benefit sharing (Basheer 2008).

Traditional Knowledge Database Library (TKDL)

Today, the increasing understanding among the pharmaceutical community about the value of traditional medicines is prompting laboratories and private companies to patent the knowledge. There have also been cases when knowledge communicated by local people has been misappropriated without acknowledgement or reciprocity to claim intellectual property on the same. At another level, patent offices have been known to issue improper patents without properly checking with databases in offline and non-electronic format due to various reasons. Databases like the TKDL helps in more efficient search for prior art and also open up avenues for cross licensing. The Ayurvedic database in classical texts can also be used for bio-prospecting and new drug discovery. Since Ayurvedic drugs can be developed through 'reverse pharmacology', in which drug candidates are first identified based on large-scale use in the population and then validated in clinical trials, access to information about the drug expedites the process of drug discovery and significantly reduces the cost (Padma 2005).

India is the first country to establish the Documentation System for Traditional Knowledge and TKDL has been the most successful initiative by the government of India to document the rich traditional medicinal knowledge to safeguard the sovereignty of the knowledge systems from being misappropriated in the form of patents while ensuring their availability in the public domain. The hardships encountered in fighting for revocation of turmeric and basmati patents granted by United States Patent and Trademark Office (USPTO) and neem patent granted by European Patent Office (EPO) forced the government to initiate the TKDL project.

In 2001, TKDL was initiated as a collaborative project of Council of Scientific and Industrial Research (CSIR), Ministry of Science and Technology and Department of AYUSH, Ministry of Health and Family Welfare, and is being implemented at CSIR. An inter-disciplinary team of Traditional Medicine (Ayurveda, Unani, Siddha and Yoga) experts, patent examiners, IT experts, scientists and technical officers are involved in creation of TKDL for Indian Systems of Medicine. TKDL is a repository of about 1200

formulations of various systems of Indian medicine, such as Ayurveda, Unani and Siddha and 1500 Yoga postures, translated into diigitalised format in five languages- English, German, French, Spanish and Japanese (Nair 2005).

The first phase of TKDL on Ayurveda was marked for completion in October, 2010. The TKDL gained significant recognition among international and intellectual property circles as a repository for patent examiners, preventing invalid patents. The TKDL is, in other words, possibly one of the most important documentations of traditional medicine knowledge in the public domain. As one measure of its impact, several developing nations in Asia and Africa are now following the WIPO model to develop the possibility of creating similar databases of medical knowledge.

Following the success of the TKDL, agencies like Indian National Institute of Science Communication and Information Resources (NISCAIR-CSIR) and Dept. of AYUSH, Govt. of India has initiated the preparation of a classification system especially for Ayurveda, in tune with the International Patent Classification, and named it as Traditional Knowledge Resource Classification (TKRC). As a classification system TKRC has adopted an innovative structure intended to facilitate systematic arrangement, dissemination and retrieval of about 25,000 subgroups related to medicinal plants, minerals, animal resources, effects and diseases, methods of preparations, mode of administration, etc (Chaudhary & Singh 2012).

As an end note one must also understand that while TKDL database prevents misappropriation of our traditional knowledge, it does not provide an enabling disclosure of the plant. Therefore, stakeholders of Ayurveda should look into this complexity and search answers to questions like how we can promote patenting of Ayurveda medicines to capture a share of the global economy, which has a mammoth potency of plausible patentability of nutritional and cosmaceutical products of Ayurveda (Chaudhary & Singh 2012)

5. CONCLUSION

In the recent past, the world has been experiencing a drastic transformation in the health sector. While the developed countries are taunted by lifestyle diseases, the developing countries like India are being tormenting under various tropical diseases with high mortality rates. On the other hand, the new global IPR regime has made health care very expensive, especially when it is out of pocket expenditure (OOPE). The existing state of affairs has compelled the public health promoters to explore the potentials of alternative medicines and the world is increasingly shifting their attention to treatment systems like Ayurveda. But this scenario is accompanied by increasing concerns about conservation of biodiversity and traditional medicine knowledge.

The shift in the focus of public health to alternative medicine, especially traditional medicine like Ayurveda, calls for a comprehensive understanding of the challenges and opportunities underlying the exploitation of biodiversity related traditional knowledge owned and operated by indigenous communities. If the State is to protect its interests, and the interests of its indigenous communities, it will have to be aggressive and proactive in laying down the guidelines governing the use of bio-resources.

In this context, it is beyond doubt that Kerala has been able to project a unique model to the world. The benefit sharing mechanism crafted to market 'jeevani' has to be restudied and a more fail-safe strategy needs to be framed. Similarly, the creation of knowledge data-base should be initiated to protect biodiversity and to promote the interests of the communities who own the knowledge. Documentation of the location of biological resources through the creation of data banks and levying of fees for bio-prospecting can help create a 'community gene/technology fund' and also make execution of Prior Informed Consent easier. Further, regulations to recognise oral traditions as documentation of use, will help strengthen the claim of indigenous communities over their knowledge base.

Decision must be taken about whether patenting or legalizing the plants will help the less favourable indigenous people. *Sui generis* systems are good alternatives for the improvement of TRIPS. Ideally the government must encourage systematic study of all similar endeavours undertaken by other developing countries and learn more about how to channel benefits from commercialization of traditional knowledge back to the originating communities. An overview of various cases reveals the solution to be a wholesome reform of the TRIPS based IPR regime. The universal patent law propagated by the TRIPS Agreement is detrimental to the community-based interests of the developing countries and therefore it has to be amended with regulations acknowledging the suggestions of CBD. IPR legislations have to be in consonance with the principles of CBD because extinction of plants and traditions will annihilate indigenous life and the country will have to take its toll in the long run. Traditional knowledge in oral tradition requires special attention, so also ethnobotanical knowledge which is mostly already in use in the public domain. Commercialization at home must be realized, irrespective of industrial country property rights.

To conclude, globalization has undoubtedly generated new risks of exclusion and marginalization across and within societies. Exclusion from accessing knowledge limits the potentials of societies to learn and integrate into the changing world order. Hence, easy access and availability of knowledge is essential for all. This does not imply that inventors and innovators should not be adequately rewarded. In fact, rewarding innovators stimulates generation of knowledge and more importantly, rewarding and protecting indigenous knowledge is significant for ensuring social and economic balance

between producers and users of technical knowledge within the intellectual property system.

References

Arewa, Olufunmilayo B (2006): "TRIPS & Traditional Knowledge: Local Communities, Local Knowledge & Global Intellectual Property Frameworks", *Marquette Intellectual Property Law Review , 10* (2): 155-180.

Arihan, Okan & A. Mine Gencler Ozkan (2007): "Traditional Medicine & Intellectual Property Rights", *Journal of Faculty of Pharmacy of Ankara , 36* (2): 135-151.

Basheer, Shamnad (2008): "Break with tradition: Protecting Traditional Knowledge", *Indian Express* , 5 July.

CBD (1992): "Convention on Biological Diversity", at https://www.cbd.int/

Chaudhary, Anand & Neetu Singh (2012): "Intellectual Property Rights & Patents in Perspective of Ayurveda", *AYU , 33* (1): 20-26.

Dewan, Mohan (2010): "The Realities of Traditional Knowledge & Patents", *Intellectual Property Watch* at http://fra.org.in/The%20Realities%20Of%20Traditional%20Knowledge%20And%20Patents.pdf

Gopalakrishnan, N.S (2002): "The Protection of Traditional Knowledge: the Need for a Sui Generis Law in India", *Journal of World Intellectual Property , 5* (5): 725-42.

KPP-GOK (2013): *Kerala Perspective Plan (Vision 2030),* Government of Kerala, Thiruvananthapuram.

Gupta, Anil K (2002): "Empowering Conservators of Biodiversity & Associated Knowledge Systems: An Intellectual Property Based Framework", *Proceedings of* 1st *Commonwealth Science Forum- Access, Bioprospecting, Intellectual Property Rights and Benefit Sharing and the Commonwealth,* IIT, Ahmedabad.

Harilal, M.S (2009): "Commercialising Traditional Medicine: Ayurvedic Manufacturing in Kerala", *Economic & Political Weekly , XLIV* (16): 44-51.

Know India-Kerala (2012): *Government of India Archive* at http://www.archive.india.gov.in/knowindia/state_uts.php?id=60

Krishnan, Pramila (2013): "More Foreign Patents for Ayurveda", *Deccan Chronicle*, 18 August.

KSCSTE (2008): *Intellectual Property Rights Policy,* Government of Kerala, Thiruvananthapuram.

Kuriakose, Tina (2006): *Legal Analysis of International Policy Response to the Protection of Traditional Knowledge*, School of International Legal Studies, JNU, New Delhi.

Mukundan, C.M (2001): "India's First Patent for Kerala Tribal's Anti-diabetic Drug", at www.ambedkar.org: http://www.ambedkar.org/News/Indiasfirst.htm

Nair, M.D (2005): "Traditional Medicines and Medicinal Plants, and their Protection Modalities from an IPR Perspective", *Plant Genetic Resources: Characterization & Utilization , 3* (2): 314-319.

- (2008): "Kerala Takes a Step Towards Protecting Traditional Knowledge", at http://www.mondaq.com/india/x/63522/Kerala+Takes+A+Step+Towards+Protecting+Traditional+Knowledge

Neetika, Kundailia, Bose Amrtya, Saroch Vikas & Johar Smita (2014): "Ayurveda and Intellectual Property Rights", *Journal of Ayurvedic & Holistic Medicine , 2* (1): 47-56.

Padma, T.V (2005): "Ayurveda," *Nature , 436* (7050): 486

Patnaik, Prabhat (2008): "An IPR Ploicy for Kerala," *People's Democracy , 32* (26).

Paul, Salvin (2009): *Politics of IPR: a study on patenting biodiversity, traditional knowledge & geographical indications with special reference to Kerala*, Mahatma Gandhi University, Kottayam.

PIB-GOI (2013): *Patents to Traditional Ayurvedic Medicine*, Ministry of Commerce & Industry, New Delhi.

Reddy, Sita (2006): "Making Heritage Legible: Who Owns Traditional Medical Knowledge?", *International Journal of Cultural Property, 13*: 161-188.

Sahai, Suman (1996): "Importance of Indigenous Knowledge in IPR System", *Economic & Political Weekly*, November 23: 3043-45.

Tilburt, Jon C & Ted J. Kaptchuk (2008): "Herbal Medicine Research and Global health: an Ethical Analysis", *Bulletin of the World Health Organisation, 86* (8): 577-656.

UNCTAD (2001): "Statement by Mr. Rubens Rcupero, Secretary-General of UNCTAD at WIPO Interregional Round Table on IPR", *United Nations Conference on Trade And Development* at http://unctad.org/en/Pages/SGStatementArchive.aspx?ReferenceItemId=5492

WHO (2014): *WHO Traditional Medicine Strategy: 2014-2023*, WHO, Geneva.

WIPO (2010): "Traditional Knowledge", World Intellectual Property Organisation, http://www.wipo.int/tk/en/tk/

Zhang, Xiaorui (2004): "Traditional Medicine: its Importance and Protection", in Sophia Twarog and Promila Kapoor (eds.), *Protecting & Promoting Traditional Knowledge: Systems, National Experiences & International Dimensions*, UNCTAD, New York.

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