



JOURNAL OF INDIAN RESEARCH



Mewar University

Knowledge to Wisdom

Mewar University

Journal of Indian Research

A Quarterly Journal of Multidisciplinary Research

Volume 3 || Number 1 || January-March, 2015 || ISSN : 2321-4155

Editorial Board

Dr. Ashok Kumar Gadiya, Chairperson, Mewar University

Dr. Mahesh Chandra Sharma, Ex-Member of Parliament

Padma Shri Ram Bahadur Rai

Dr. P. Ramaiah, Registrar, Mewar University

Prof. B.U. Khan, Dean (Research), Mewar University

Dr. K. K. Vashistha, Dr. V. P. Singh,

Niraj Kumar, Dr. Chander Pal Singh

Editor (Hon.)

Niraj Kumar

Assistant Editor

Dr. Anshu Tyagi

Assistant Director, Mewar University

Contact Us

Editor, Journal of Indian Research

Mewar University

Sector-4C, Vasundhara, Delhi-Gzb. Link Road, Ghaziabad-201012 (U.P.)

Phone : 0120-4758300

E-mail: jir@mewaruniversity.org, Website : <http://mujournal.mewaruniversity.in>

Abstracts and Indexing

<https://nkrc.niscair.res.in>

www.drji.org

www.isid.org

www.cifefactor.org

www.scholar.google.com

Design & Production

Samvad Media Pvt. Ltd.

E-mail: media.samvad@gmail.com

Ph: 011-23517803

Copyright © Authors. All rights reserved. Authors are responsible for obtaining permission to reproduce copyright material from other sources. The Publisher assumes no responsibility for any statement of fact or opinion or copyright violations in the published papers. The views expressed by authors do not necessarily represent the viewpoint of the Journal.

TABLE OF CONTENTS

CHAIRPERSON'S MESSAGE	iv
EDITORIAL : Niraj Kumar	v
ARTICLES	
• Issues of Labour Unrest in Asia: A Comparative Study of Hotspots and Flashpoints / <i>Surendra Pratap, Annavajhula J.C. Bose</i>	1
• Intraday Lead/Leg Relationships Between the Futures and Spot Commodity Market / <i>Gurmeet Singh</i>	24
• Employees Attitude Towards Human Resource Development Policies : A Case Study of HPTDC / <i>Dr. Yoginder Singh</i>	48
• The Earliest Settlement At Chechar – Kutubpur / <i>Arun Kumar</i>	67
• Conquest of Jammu and Kashmir and Early Evolution of Legislative Sphere / <i>P. Kumar</i>	78
• Strategic Mineral Resources Among IBSA Countries: Partnership and Challenges / <i>Gayettri Dixit</i>	88
• Study of Various Image Enhancement Techniques : A Critical Review / <i>Jasbir Singh Lamba, Prof. Rajiv Kapoor</i>	100
• ICT And Economic Growth-An Indian Perspective / <i>Tariq Ahmad Lone, Dr. Tariq Ahmad War</i>	113
• Municipal Own - Source Revenue Compliance and its Potentiality, The Case of Birendranagar Municipality in Nepal / <i>Shankar Prasad Upadhyay</i>	117
• Feminist Concerns in Canadian Novelist Carol Ann Shields' <i>Unless</i> / <i>Dr. Anupam Chakrabarti, Arati Kumari</i>	128
• Treatment of Women as Slaves in Vijay Tendulkar's <i>'Kamala'</i> / <i>Shikha Goyal, Dr. Mohd. Nazzar</i>	138

CHAIRPERSON'S MESSAGE

It is heartening to bring out a thought-provoking journal, issue after issue, year after year. The process of conceiving of each issue of the Journal takes place in the premises of Mewar University at NCR Campus where the members of the editorial team sit together in a brainstorming session and try to winnow quality articles that can be useful to the contemporary researcher. The next steps center mostly on our dynamic editor, Niraj Kumar. Articles are selected after rigorous plagiarism test and forwarded to the reviewer. Suggestions are communicated to the respective authors. Author needs to revise the piece, sometimes the editor rewrites and thence the paper is set in the structure. Once the articles are ready, the editor begins the process of fact checking. Articles are edited for clarity, grammar and spelling. After the articles are fully edited, they are sent to layout where a designer works closely with the Editor. Each article is then proofread at least twice in hard copy and finally, the journal is sent to the printer! The soft copy of the journal is thence sent to the web manager who posts the online version.

Hundreds of hours are spent editing and rewriting. The editorial team has to make hundreds of call and communicate through e-mails between authors and reviewers. As Chairperson of the University and the Chairman of the Editorial Board, it is extremely rewarding for me personally, since creating a new journal issue each quarter is far more than a job; it is a deeply satisfying creative process offered at the altar of wisdom.

The current issue has some fascinating papers. While we are focused on neo-liberal model of development, we tend to marginalize the issue of labour reforms and their welfare. Surendra Pratap and Dr. Annabhajula J.C. Bose discuss the issue of labour unrest in developing Asia in an elaborate paper, "*Issues of Labour Unrest in Asia: A Comparative Study of Hotspots and Flashpoints*." They compare the current predicament of industrial labourers across growing Asia with the level of brutality and exploitation that existed in the 19th and early 20th centuries in Europe when the industrial labourers were exploited by the double whammy of low wages and poor working conditions, without any labour right.

In quest for unbridled development, we cannot ignore the interest of labourers and farmers. The social scientists and management experts need to find a way to cater to the interest of 1% and 99% simultaneously. In India, we have 1.2 crore completed flats lying vacant as there are no buyers; while on the other hand, there is a massive population of 5.5 crore who do not have even a thatched roof to live in. Can there be a welfare economics and humane administration that can link up the demand and supply side with greater emphasis on empathy and lesser on greed? I hope the new breed of thinkers develop solutions to this age-old problem so that we can build a beautiful world.

I am also shocked at human tragedy in Nepal caused by the double earthquake and would make appeal for opening purses and hearts to support the Himalayan brethren lest a human catastrophe unfolds.



Dr. Ashok Kumar Gadiya

EDITORIAL

There is palpable anxiety in the world. The rise of ISIL in the Middle East, expansion of gruesome murderers like Boko Haram in Africa and ceaseless shelling of civilian population in eastern Ukraine by own State has been keeping the global leadership on tenterhooks. And suddenly, the Himalayas shook on 25th April. The shaking was experienced from Chennai to China. Nepal bore the brunt. Thousands of lives have been lost and rehabilitation of millions is a challenge for the international community. Destroyed homes and villages are to be rebuilt from the scratch. The support poured from around the world. Humane face trumped over the evil face of religious terrorists. But, it will be a Herculean task to restore the ancient temples and cultural treasures.

The earthquake and after-shocks proved disastrous to the Newari architecture in particular. Nepal was world-famous for its architecture which emerged during the Newar –Malla rule before Gurkhas took over the Kathmandu valley in 1769. The three centres of Nepal's history and culture, Durbar Square in Kathmandu, Patan(Lalitpur) and Bhaktapur lies in ruin. Even the Dharahara Tower which symbolized Nepal's pride and unity, built by Nepal's first Prime Minister in 1832 has been reduced to a stump. The decapitation of Dharahara was analogous to the beheading committed by a samurai through the bushido honour code of seppuku. It was a suicide of Himalayan heritage and the Himalayan plate performed the bushido code. But, what lies in ruin, must stand tall once again.

Nepal, in fact, is the Himalayan Bridge. Till 4th century, it was under the suzerainty of the Gupta empire. It was at this time that Newars of Tibeto- Burman language group populated Kathmandu valley. The Licchavis established a Kingdom in the valley and Xuanzang has written a detailed account of the life in the valley. When the dynasty declined, Newari rule was established in 879 A.D. The Newaris engaged in a task of grand fusion. They cultivated Hindu-Buddhist culture. There was fusion of different language groups and Newari itself went into a major transformation by appropriating Sanskrit vocabulary and several Indo-Aryan dialects. Complementing cultural fusion, there was fusion of linguistic universes.

The Mallas continued the synthetic tradition and established three major politico-cultural centres at Lalitpur (Patan), Bhaktapur and Kathmandu. Gurkhas overwhelmed the divided Mallas. During Gurkha rule, there was significant decline of the unique Nepalese-Newarese culture of aesthetic fusion, this-worldly joy and ritualization of the human life.

It was the grounding during earlier Golden period of Nepal that inspite of presence of giant neighbours, Nepal stands united. The Newarese custom of Hindu- Buddhist fusion is evident from the myth-making regarding the origin of Nepalese inhabitants. While many claim the ancestry from as far back as Kerala (Nayar), several other claims the northern heights to be the originary home. There are different origin myths for the Kathmandu valley alone. While Buddhist claim it was a lake which was drained by the sword of Manjushri, the Hindus believe that the Gods descended from the Devapuri to live at the human plane. Kathmandu itself has two major centres- Swaymabhunath and Pashupatinath, for Buddhist and Hindus, respectively. But, both are venerated and visited by the adherents of two religions.

The fusion is more discernible in culinary sphere. In Nepal, *Ghasa* is a particular kind of food items which is ceremoniously displayed before the proper feast begins. These are characterized

numerically. *Nyataghasa* is five-item ritual arrangement of food; *cyataghasa* is eight-item based display and so on. The simplest is the five-item based and the most complex *ghasa* is 84-item based. There is unique correspondence between food item, and pantheons in Hinduism and Buddhism. In the first set of *Nyataghasa*, the five components and their correspondence are as follow: *Palu*(ginger)→*Vairocana*→ Bhimsen; *Musya*(soy bean) → *Akshobhya* →*Arjuna*; *Wo* (pulse cake) →*Ratnasambhava*- *Nakula*; *Khayapi* (pumpkin) →*Amitabha*→*Sahadev*; *Waunca* (vegetable) →*Amoghasiddhi*→*Yudhisthira*. In this *Nyatyaghasa*, the same food item signifies Dhyani Buddhas as well as Pandavas of Mahabharata, simultaneously. Thus, an elaborate system of fusion between vegetation, Hinduism and Buddhism was established. This culture of fusion can also be seen in the Newari cult of Kumari goddess where a pre-puberty young girl is worshipped as the embodiment of feminine energy, Devi. In fact, the political system that has evolved itself has element of fusion between communism of northern neighbour and democracy of southern neighbour.

Reconstruction of Nepal and Newari architecture cannot be achieved without imbibing this spirit of fusion. While the intermittent aftershock was occurring, the world community rushed towards Nepal. The arch-rivals like China- India, China-Japan, Israel-Iran, India-Pakistan, US-China – sent their relief and rescue teams. This was the true Nepalese spirit of grand synthesis of differences. The indomitable spirit of Nepalese , commendable rescue, treatment and relief work by the local authorities and prompt action by world community in airlifting immediate support have helped to mitigate the impact of disaster.

The calamity also teaches us lesson. We must not be enamored by the non-local architecture and western developmental model. Most of the death was reported from the cities where people were trapped in cement-brick rubble. The West developed the cellar-model of living habitat utilizing concrete and iron due to its climatic condition, where heat is to be preserved in the cold climate. In the earthquake prone zones of the Pacific and the Himalayas, wooden and bamboo are the traditional building materials. Infact, many earthbag structures in places like Badhikhel survived the earthquake. Houses ought to be built as a response to the landscape. But, the political parties as well as the governments in South Asia promise ‘*pucca*-houses” as the panacea for all the miseries of life. While thatched roofs are better suited to climatic conditions, the impact of western discourse of modernity does not allow other epistemological world-views to be considered significantly. What is required is an ecology-specific Developmental Model, a “*fusion of horizon*” between different epistemological frameworks which the leading Indologist from Nepal, Professor Sthaneshwar Timalsina wrote about in the previous issue of the *Journal of Indian Research*. The Asian governments must raise red flag to Chinese plan to build railway tunnel under Mt. Everest. The glacier ecology of Sagarmatha has been badly disrupted. Avalanches were perhaps the Sagarmatha’s coughing- a warning sign to human engineering chutzpah which can destroy the Himalayan culture, ecology and communities.

Nepal is a surplus state in terms of biodiversity. Though, it covers around 0.1% of the world’s total land mass, over 2% of flowering plants, 8% of the world’s bird species and more than 4% of mammal species abide in Nepal. Reconstruction must take into consideration ‘*fusion of horizon*’ of both human and “other-than-human-species”. Nepal will rise soon with the feet firm on ground that can never be overpowered by any shaking-geological or political. Nepal will also bring two competing Asian giants to synergize. From the rubbles of the Himalayas, the New Asia will arise!

ISSUES OF LABOUR UNREST IN ASIA: A COMPARATIVE STUDY OF HOTSPOTS AND FLASHPOINTS

Surendra Pratap*
Annabhujula J.C. Bose**

ABSTRACT

The expansion of global production into the Asian countries has led to the rise of intense labour movements in recent times. The hotspots of the labour movements have been mainly Cambodia and Indonesia in Southeast Asia; Bangladesh, Pakistan and India in South Asia; China and Vietnam in the erstwhile socialist Asia; and South Korea in the advanced economies of Asia. This paper is a comparative study of the flashpoints of the labour movements in these hotspots. The study highlights that the issues concerning these rising labour movements are certainly not an indication of labour problem as the biggest threat to social stability. Instead, these are desperate expression of labour's quest for a life of decency and dignity in the widespread context of neoliberal patterns of economic organisation and policy undercutting worker's well-being with labour conditions returning to the level of brutality and exploitation that existed in the 19th and early 20th centuries when the industrial labourers were exploited by the double whammy of low wages and poor working conditions, without any labour right.

Keywords: Automobiles, demonstrations, electronics industry, factory occupation, formal sector, informal workers, justice, Labour movement, rail workers, strikes, textile and apparel industry.

INTRODUCTION

With the proliferation of global factories in Asia due to outsourcing of manufacturing by the transnational corporations in conjunction with the adoption of export-led models of development in the Asian countries, especially under neoliberal-imperial globalisation (Pratap 2014), labour in the Asian countries has been subject to such a brutal exploitation that in the

***Surendra Pratap** is associated with the Centre for Workers Education, New Delhi; E-mail: spsurendrapratap@gmail.com

****Dr. Annabhujula J.C. Bose** is Associate Professor at the Department of Economics in the Shri Ram College of Commerce, University of Delhi, Delhi; E-mail: bosc.ajc@gmail.com

last 10 to 15 years, workers' activism is flaring up and working class power has shown signs of rising as a countervailing power to resist the exploitative power of capital as well as the state. Consequently, it is the concern of this paper to document and comparatively analyse the issues of workers' struggles to seek justice in a "world without ethical rules and action" (Brockway 2001).

LABOUR MOVEMENT IN SOUTHEAST ASIA

Cambodia

The garment industry in Cambodia is the single most important sector generating major share of the manufacturing GDP and employment. It is also the single largest source of exports. The labour movement has also been focused on the garment sector and union density in this sector has already reached more than 40 percent. Due to the low wages and harsh working conditions combined with almost no job security and very little, if any, social security; discontent among garment workers has been rising steadily. This is reflected in the data on strikes. The number of strikes and man days lost continuously increased from 2003 onwards. In 2003, there were 55 strikes and 130,284 man days were lost. In 2012 and 2013, the number of strikes reached 121 and 131 respectively, with 542,827 and 825,646 man days lost. The year 2012 particularly marks the beginning of large scale strikes and very high rates of participation by workers in the strikes.¹

In 2013, the labour movement took another leap. Throughout the month of December in 2013, there were a series of rallies of workers demanding a revision of the minimum wage upward to US\$165 per month. On 23 December 2013, the government declared that it would raise the minimum wage from the existing US\$75-80 per month (probationary/non-probationary workers) to US\$100, a level far short of the workers' demand of US\$165. On 24th December, almost all the garment, footwear and textile workers' union federations, including Coalition of Cambodian Apparel Workers Democratic Union (C.CAWDU), National Independent Federation Textile Union of Cambodia (NIFTUC), the Collective Union of Movement of Workers (CUMW), Cambodian Alliance of Trade Unions (CATU), Free Trade Union of Workers of Kingdom of Cambodia (FTUWKC), Worker Friendship Union Federation (WFUF), and the Independent Youth Union Confederation (IDYTU) declared a strike in protest. Together, the federations comprised 386 plant-level unions and represented 249,700 workers in the textile, garment and footwear industries. Workers of around 127 factories went on strike. The active participation of workers and unity among unions showed the gravity of their grievance. There was also a radicalization of the labour movement, which became particularly visible during the 2014 strikes.² Violent clashes began when the government tried to stop the workers from marching peacefully on Veng Sreng Road on 2nd January 2014. Riot police and soldiers beat up union leaders, workers and supporters. Many were arrested with severe injuries, including Vorn Pao, President of Independent Democracy of Informal Economy Association (IDEA) and Theng Savoeun, Coordinator of Coalition of Cambodian Farmer Communities (CCFC). Angered workers began to burn tyres and set up roadblocks against the armed forces. On the morning of 3rd January, 2014, the armed forces started shooting live ammunition directly at

the workers, killing four workers and severely wounding many others.

A series of protests were organised in Cambodia and solidarity actions were organised in many countries, demanding the unconditional release of all arrested workers and rights defenders. In the mid-January, an international trade union, the ITUC took the initiative to work to resolve the dispute but the outcome was only a disappointment: "Unfortunately, our sincere efforts to build bridges with the Garment Manufacturers Association (GMAC) were met with outright hostility and with a complete disregard to the sustainability of industrial relations. Indeed, GMAC embraced the prospect of creating further conflict in the industry. We hope that the hard rhetoric was just that, and that there may still be a way forward, but we cannot but express our deep disappointment with their attitude."³ On 16 January 2014, the European Parliament passed a resolution calling on the Cambodian government to conduct an independent, internationally led investigation of the election and the killing of five garment factory protesters.⁴ The European Parliament urged the Cambodian authorities to thoroughly investigate and hold to account those responsible for the deaths and injuries, and also urged that the 23 arrested during the protest strikes be freed and that the government's ban on freedom of assembly be immediately revoked.⁵ On 15 January 2014, the U.S. House of Representatives also passed a draft spending bill that would cut some aid to Cambodia unless similar demands regarding the flawed election were met.⁶ The European Union is Cambodia's single largest aid donor, and about 50 percent of all shoes and garments produced in Cambodia are exported to the E.U. market. On 11th February 2014, two arrested workers were released on bail, but the bail applications of 21 other arrested workers and rights defenders were rejected by the Phnom Penh Appeal Court. The struggle to release the workers continued.

Probably, this struggle of Cambodian garment workers also marks a beginning of a new kind of international solidarity actions going beyond the petitioning and one-time show of ritual solidarity. A series of solidarity actions were organized in various countries across the world. Demonstrations were also organized in the countries where the global brands which have invested in the garment sector of Cambodia, are based, like the U.S., Germany, the UK, Turkey and South Korea. The most important demonstrations were held in Asian countries including Hong Kong, Indonesia, Thailand, the Philippines, Malaysia, Bangladesh and Sri Lanka. 10 January 2014 was observed by organizations of Asian workers organizations as *International Day of Action in Solidarity* with garment workers in Cambodia and demonstrations were organized in many Asian countries.

Indonesia

Indonesia seems to be entering a new period of awakening and emerging as one of the most important flashpoints of the labour movement in Asia. It is worth mentioning that the Indonesian labour movement was almost completely destroyed both physically and ideologically after the defeat in 1965 and was not allowed to advance for decades when Indonesia was under dictatorial regimes. In the mid 1980s, manufacturing industries started expanding in a big way with an obvious export oriented focus. This period coincided with the emergence of strong democratic movements against the authoritarian regime. These two factors helped the re-

emergence of labour movement in Indonesia and also shaped its main characteristic features. By virtue of these two factors, the labour movement was able to steadily expand its base both in traditional sectors as well as in manufacturing. As the new labour movement, as part of democratic movement, was more open and equipped to go beyond traditional forms of unionism, it was able to evolve new and innovative strategies of organizing and collective bargaining. The power of the working class increased significantly and this was reflected in the rise in the number of strikes from 61 in 1990 to 300 in 1994. Largely, it was the force of the working class movement that shook the Suharto regime. The Reformasi Movement of 1998 further opened the democratic space for labour movement. It was the force of Reformasi movement, along with other factors, that started a debate within the SPSI, the government sponsored monopoly trade union of the Suharto period, and finally a more progressive fraction came out of SPSI to form a separate trade union (Sprague 2012).

After the restoration of trade union rights and end of the monopoly of SPSI, the labour movement in Indonesia progressed in leaps. A wave of strikes emerged in 2011 and continued throughout 2012. During this time a coalition of trade unions, the Council of Indonesian Workers and Labourers (MPBI) was formed that united five million workers under one banner. Finally, with the 2012 General strike the Indonesian labour movement entered a new phase, moving towards consolidation of the working class movement at the national level and gradually emerging as a political force. The general strike was more a celebration of victory than a protest. And it was really a victory in itself, since the working class was able to organize a general strike after fifty years. More than two million workers participated in this strike. The major demands included a fifty percent increase in the minimum wage and the abolition of outsourcing system and anti-labour laws.

The power of working class emerged again on the streets of Indonesia in the 2013 general strike. Around three million workers in 20 provinces and 150 regencies held a nationwide strike for two days and paralyzed activities in around 40 industrial areas in Java, Sumatra, Sulawesi and Kalimantan. The demands were by and large the same as in the 2012 General strike, i.e., a 50 percent hike in minimum wages and an end to job outsourcing and the contractual system. They also demanded the immediate passage of the bill on housemaids and revision of the newly enacted law on mass organizations that, according to them, has been devised to silence labour unions. The power of working class unity forced the administration to announce an 11 percent increase in the minimum wage from Rp 2.2 million to Rp 2.4 million, on last day of strike.⁷

It is also interesting to note that the general strike of 2013 was a part of and also the result of a consolidation process in the Indonesian labour movement. Consolidation between the Confederation of Indonesian Unions (KSPI) and the Workers Joint Secretariat (*Sekber Buruh*) almost culminated in September 2013, and it was agreed to accelerate the further process of consolidation. A Preparation Committee of National Consolidation was formed. In the national meeting of the Indonesian labour movement in September, more than 100 trade union representatives from 18 provinces participated. The meeting decided the priority issues of the movement: a) Rejection of low wage politics by using the strategy of struggling for a 50 percent wage hike; and b) elimination of the outsourcing system. The decision to hold a

general strike was also taken by this committee.⁸

One more interesting aspect of the Indonesian labour movement needs a mention here. In the formal sectors, similar to India, the violation of trade union rights and victimization/repression of workers and trade union activists has emerged as a major problem. With the rising power of the labour movement the Indonesian trade unions have adopted a unique strategy to fight this - the factory occupation or factory raids. In these factory occupation/raids, the trade unions in the region collectively mobilize their members and other workers to block the gate of the target factory which has been prohibiting union activities and victimizing workers and union activists. They demonstrate in front of the target factory and demand the management to comply with the labour rights.

One such factory raid was held at the Samsung for not allowing union activities in its factories. Around 200 workers of Samsung Electronics had formed a trade union in 2012, but all the leaders and members of the union were dismissed and the union was literally removed from the factory. Repression was unleashed on union activists. Similar repressive measures were adopted to remove unions and stop union activities in Samsung's supply-chain factories as well. The unions suspected that Samsung was behind all incidents of busting the union in its supply-chain factories. Therefore in November 2012, the trade unions in the region along with those in the supply-chain of Samsung decided to occupy/raid Samsung and demand that the company respect labour rights and stop union busting. Around 10,000 workers gathered at the union secretariat to march towards Samsung. However, on reports of the march, hundreds of anti-riot police with trucks, water cannon cars, tear gas launchers and guns were dispatched to stop the workers. In fact, the police had been on guard in that area around the Samsung plant for a few days before this action. The workers were finally able to break through the police circle.

However, the factory raid that day could not reach the Samsung factory. In December, the union again mobilized the workers and made a strong demonstration in front of the South Korean Embassy, demanding that the Embassy take action to punish Korean companies that violate national laws, and direct Samsung, in particular, to stop union busting and reinstate union members who had been terminated. The representatives of the South Korean Embassy promised to take action against the management of Samsung. The struggle continues (Mufakhir 2013).

LABOUR MOVEMENT IN SOUTH ASIA

Bangladesh

Here too, the garment industry is the single most important sector, contributing the largest share of manufacturing GDP and employment as well as the greatest share of exports. Therefore, the labour movement in Bangladesh is also more concentrated in the garment industry. However, unlike Cambodia, trade union density in Bangladesh is extremely low. In the ready-made garments (RMG) sector, there are only 63,000 unionised workers out of a total of about 3.5 million workers. Moreover, in about 5,000 factories there are only about 140

unions, and out of them only 20-30 are active. The anti-union environment is so strong that in the whole RMG sector, only two new unions were registered in 2008, none in 2009 and 2010, and just one in 2011 (ITUC, 2012).

Wages are very low and insufficient for survival, and working conditions are one of the worst. 414 garment workers lost their lives in 213 factory fires between 2006 and 2009 (Pratap 2011). According to the Safety and Rights Society (SRS), 388 workers were killed in occupational accidents in 2011 and 490 in 2012, and ILO claims that 11,000 workers die each year in work-related accidents in Bangladesh (Tazreen and Sabet, 2013). According to incidents reported in newspapers, during the three months from December 2011 to February 2012, seven garment workers were killed and 119 workers were injured in workplace accidents (ITUC 2012).

It is in this environment that the global brands are able to capture the major share of revenues generated at the lower tier of the value chains located in Bangladesh. According to a study conducted by the Bangladesh Institute of Development Studies, value added by workers is about 31 for every 100, and out of this 31, only 7 is paid as wages and 24 goes as profits to investors. According to a World Bank estimate, a Bangladesh garment worker gets US\$ 290 by producing 2,536 T-shirts per year; on the other hand, an Indian worker gets US\$668 by producing only 56 pieces more than his Bangladeshi counterparts (Pratap, 2011)

Owing to these conditions, the labour movement in the Bangladesh garment industry emerged with very different dynamics. Forming shop floor unions is highly difficult, and therefore the organizing strategies are focused on organizing the workers under the banner of federations. This is reflected in the fact that a huge majority of members of federations are individual members, rather than shop floor union members. With no scope for collective bargaining at the shop floor level, the dominant practice emerges as sectoral bargaining and political struggles in the form of general strikes and road blocks to compel the government to intervene and take initiatives to resolve the problems (Pratap 2011).

The first phase of the major struggle for a system of fixation and revision of minimum wages emerged in 2005-2006. A series of demonstrations were organized and thousands of workers participated. These were followed by repression, leading to radicalization of the movement. Finally, a minimum wage board was constituted and the minimum wage was fixed at TK 1,662.50 (US\$25) per month, far below the workers' demand for TK3,000. The second phase of the struggle lasted from 2008 to its culmination in the latter half of 2010. There were a series of strikes. Due to a virtual price war that started in 2008-09 among the main garment exporting countries, i.e. Bangladesh, China, Pakistan and India, the wages of Bangladesh garment workers were cut by almost 30 percent between 2008 and 2009. Many employers were paying less than the minimum wage and wages were not paid on time, while the workloads were increased. It was in this situation, widespread discontent emerged, and strikes and demonstrations took a violent shape. In 2010, from January to June there were about 72 incidents of labour unrest in which about 988 workers were injured in clashes with the police. Finally the minimum wages were increased to TK3000, again well below the demands of workers for TK5,000. Even then the employers were not ready to pay this amount and demanded to fix the minimum at TK2,500. A demonstration held in December 2010 took

a violent turn again. Four workers were shot dead by the police during demonstrations in the port city of Chittagong. Later on 14th December, there was a major fire in a sportswear factory of Ha-Meem Group near Dhaka which killed about 30 workers. Only after these incidents and fearing wider labour unrests did the factory owners accept the new wage (Pratap 2011).

It has become the norm in Bangladesh that the minimum wages are not revised unless the labour unrests compel for that. Every year there have been large scale demonstrations and strikes for this demand. The wages were not revised after 2010, and therefore from mid-2012 to 2013, there were another wave of radical demonstrations and strikes. More than 50,000 participated in strikes, road blockade and demonstrations, particularly in the Narayanganj and Ashulia regions around Dhaka. There were several violent incidents and clashes with police. During the same period, two major fires occurred, killing more than 1,000 workers. Finally, in November 2013, the minimum wage was increased to TK5,300 (\$68), again much below the demands of workers for TK8,000.⁹

It is interesting to note that even after all these incidents and even when the Bangladeshi safety accord (signed by more than 80 Western retailers) gives a central role to the trade unions, employers continue to fiercely oppose the unionization efforts and victimize the workers and union activists.¹⁰

Pakistan

In Pakistan, the textile and apparel industry is the most important industry in terms of generating the largest share of manufacturing GDP and employment, as well as major share of exports. Therefore, the labour movement is also more concentrated in this sector.

The most important centre of Pakistan's textile industry is Faisalabad, which is country's third largest city and is often called the Manchester of Pakistan with about 200,000 power looms out of a total of about 300,000 in the whole country (Mallick 2013). The nature of this industry and the employment structure is unique in that there are a small number of workers in each unit, and they are mostly hired with a casual employment relationship. The majority of the workers live in surrounding areas in some sort of community relationship. These factors, along with other political factors, make it highly difficult for the formation of shop-floor unions. However, they provide immense scope for organizing workers in common platforms, i.e. federations. Hence, here, as in case of Bangladesh, more workers are organized in federations than in shop-floor unions, and there is more focus on industry- wide collective bargaining than at the shop-floor level.

However, there is a big difference here from Bangladesh. In Pakistan, there is no such competitive multiplicity of federations as in Bangladesh. The textile workers' movement in Faisalabad is more or less united under the banner of the Labour Quomi Movement (LQM). The LQM was formed in 2003 in response to the increasing repression of power loom workers. After that, the textile workers' movement took a big leap forward and developed a strong base in Faisalabad and later expanded to surrounding districts (Mallick 2013).

In 2008, there was a large scale strike by power loom workers in Faisalabad that lasted

for four days. More than 50,000 workers went on strike and thousands others joined them in solidarity. The strike started when the power loom owners opened fire on a peaceful demonstration of workers. Nine workers were seriously injured. The workers were demanding implementation of a previous agreement signed by the owners and workers. The attack enraged the workers and in retaliation they ransacked some factories. As the news spread across the city, thousands of workers took to the streets and joined the protest demonstrations, and the workers' action committee announced that the strike would continue for an indefinite period. In the end, the government intervened and ensured the implementation of the agreement (Bhatti 2008).

The historic strike of Faisalabad took place in 2010. This was probably the first time since the 1970s that the power of the working class emerged on the streets with all its strength, courage and lively dynamics. The strike started on 20th July and lasted for nine days. Thousands of workers rallied throughout the strike, despite the Punjab government banning public gatherings on 19 July. As many as 250,000 powerloom workers in Faisalabad were striking together and demanding a hike in the minimum wages, a hike that had been recommended by the Minimum Wage Board.

The strike was held in the period when state subsidies on gas, electricity and petroleum were withdrawn and the privatization drive was at its peak. The prices of essential commodities were skyrocketing, and for some household items it increased up to ten times. The whole society was in anger. To pacify the discontent, the government increased the wages of public sector employees by 50 percent, and in the meantime the Minimum Wage Board also recommended a wage hike of 17 percent. Moreover, the factory owners were directed to pay at least seven percent of wages into the social security system. However, the factory owners did not implement the wage hike, and the workers were not provided with social security cards. It was against this background that the LQM started mobilizing workers and demanding the implementation of the recommended 17% wage increase. There was a sudden outburst of anger when in early July, ten strongmen hired by factory owners stormed into the office of LQM activist Mustansar Randhawa and killed him and his younger brother Naseer. The workers in Faisalabad, including those in Jhang, went on a general strike. In Faisalabad, 100,000 powerlooms were completely shut down and 250,000 workers joined the strike. On the eighth day of the strike, police and goons hired by factory owners brutally attacked 20,000 workers engaged in a peaceful march. The clash lasted for almost 10 hours and hundreds of workers were injured. Fourteen workers, including six chapter presidents of the LQM were arrested. On 10th day of the strike, 25,000 people marched to the District Commissioning Officer's (DCO) house, and camped there. Finally, the DCO ordered the factory owners to implement the recommended wages, register workers with the Social Security Board and issue them social security cards. The strike ended and some of the earlier arrested workers were released. But the six local chapter presidents of the LQM were not released. They were tried and convicted by an anti-Terrorism Court. An unimaginable punishment was ordered. For their dedication and courage to fight for the people, they were awarded a combined sentence of 594 years in prison! The Faisalabad strike very powerfully exposed the nexus between capital (factory owners) and the state against labour (Mallick 2013; Tariq 2010).

In 2012, approximately 10,000 power loom workers, led by LQM, organized a 155-km march from the industrial city of Faisalabad to Lahore against factory owners who were not complying with statutory minimum wage legislation. The protest was successful in compelling the government to take the initiative to ensure that factory owners increase the wages by 28 percent in line with minimum wage during the relevant period (Mahmood 2012).

India

In India, manufacturing is more diversified. Three major sectors, i.e. textiles and apparel, automobiles and electronics together contribute a significant share in manufacturing GDP and employment as well as a major share of exports. Therefore, the labour movement is also widespread across these sectors. However, in the garment sector, the labour movement is one of the weakest. The dynamics of movement seen in Bangladesh and Pakistan have yet to emerge in India. In the textiles, particularly at some major centers of industry, such as Panipat, Ludhiana and Tirupur, the labour movement is gradually emerging with a somewhat similar dynamics as we have observed in Pakistan and Bangladesh, but at a lower scale of activity.

In Panipat (Haryana), 30,000 spinning mill workers from 500 mills went on indefinite strike in 2006, demanding implementation of the minimum wages and other labour standards.¹¹ Textile mill workers in the Tirupur knitwear cluster and power loom workers from thousands of units in Coimbatore and Tirupur went on strike in 2011, demanding a wage hike.¹² In Ludhiana (Punjab) 2,500 textile workers from more than 150 textile factories went on a month long strike demanding a wage hike and the implementation of labour laws. It is interesting to note that the factory owners in Ludhiana spoke the same language against workers as was used in Pakistan. They issued an advertisement in newspapers, saying: “Dear Chief Minister, Terrorism has Struck Ludhiana” and demanded action against the textile workers’ union leading the movement (Amritpal 2011).

There have been several strikes in various other sectors in India in the last 10 years. For example, tea workers strike in more than 200 tea gardens in West Bengal in 2012 (demanding a daily wage of Rs. 250 or US\$ 5.00)¹³ and an strike of almond processing workers in Delhi. However, a more dynamic labour movement has been emerging in formal sectors, more focused in the automobile industry, but also spread in other industries such as electronics and food sector. In the last decade a new wave of workers’ struggle in the formal sector has emerged, mainly on the issue of the formation and recognition of trade unions. This phase can be said to have started with the Honda workers’ struggle in Gurgaon in 2005. Thereafter, we observe a continuing wave of such struggles (Pratap 2010). These include the Hyundai workers’ struggle in Chennai between 2007 and 2011; the MRF workers’ struggles in Chennai, 2006- 2009; the Graziano workers’ struggles in Noida, 2007-08; the Pricol workers’ struggle in Coimbatore, 2009; the Nestle workers’ struggle in Rudrapur, Uttarakhand, 2009; the Rico Auto and Sunbeam workers’ struggle in Gurgaon, 2009; the Foxconn workers’ struggle in Chennai, 2010; the Satyam Auto and Rockman Industries workers’ struggles in Haridwar, 2012; the General Motor workers’ struggle in Gujarat, 2011; the Pepsico India workers’ struggle in West

Bengal; the ILJIN India Electronics workers' struggle in Noida, 2012; the Bajaj Auto workers' struggle in Chakan and Pune, 2013; and the Maruti Suzuki India workers' struggle in Gurgaon, which has been ongoing since 2011.

In all the above struggles, the major issue was related to trade union rights. The workers either attempted to form a trade union, or after the formation of a trade union demanded recognition of their trade union and the corporate-state collusion unleashed a large scale victimization and repression against them. In most of the cases, particularly in later struggles, the issue of regularizing the contract workers had been inbuilt in the process of unionization. In most of the struggles the contract and regular workers came together, with varying levels of unity, thereby challenged the capital's strategy of dividing contract and regular workers (Bose 2012).

The Maruti Suzuki workers' struggle brought it to a culmination by (a) strongly raising the demand to abolish the contract labour system, and (b) going for a second occupation of the factory on the issue of contract workers. At no stage were the workers prepared to compromise on this issue. Another important aspect of Maruti Suzuki workers' struggle is that it came out with innovative strategies, for example the strategy of factory occupation, that increased the effectiveness of the struggle. They decided to remain inside the factory day and night and stop the factory's operations, rather than move out of the factory. Maruti Suzuki workers struggle was also benefitted from a qualitatively higher level of traditional trade union solidarity in the region, developed through the continuous struggles of auto- workers in the region. The Joint Trade Union Council of Auto-workers' unions fully supported the Maruti Suzuki workers with qualitatively higher levels of solidarity action, such as solidarity strikes. However, during the struggle a qualitatively new and higher form of solidarity action emerged. There were simultaneous factory occupation by workers of two other units of the company, Suzuki Power Train and Suzuki Motorcycles, where the same issues were raised.

The most important aspect of the Maruti Suzuki workers' struggle that makes it qualitatively different from most of the above workers' struggles is in its strong social linkages. On the one hand, the struggle was able to build strong links with various pro-labour social and political organizations, including various leftist groups working in the NCR Delhi. At the same time, they successfully mobilized the local people in support of their struggle and against the injustice done to them by corporate-state collusion. It was the strength provided by these social linkages that after being crushed again and again, the struggle did not accept defeat and emerged again and again with a new power, new collectivism between contract and regular workers, and with an expanded alliance in society.

In the second stage of the movement after the 18th July incident¹⁴, when the workers were fully crushed, and when the Suzuki management and the state was mobilizing the local elites against the workers, and the whole media was creating an atmosphere against them, without the above social links it was not easy for the struggle to rise up again. It is probably one of the India's longest factory workers' struggles of the decade, and is still ongoing. In all, 2,300 workers, including 546 regular workers, have been terminated (Pratap 2013). So far, 147 workers have been jailed and their bail applications have been rejected by the courts since long. But at last, on the 17th of March 2015, 77 of the 147

workers accused of violence nearly three years ago were granted bail. The 2012 arson, which killed the company's human-resources manager and injured many others, eclipsed the stories of the workers' year-long struggle for a union and better working conditions (Yadav 2015). The following poetic expression about the Maruti Swift car captures the reality of the Maruti workers (Katyal 2015):

Maruti Swift

It takes a 1248cc diesel engine,
4 cylinders,
16 valves,
a max. torque of 190 newton meters
@ 2000 revolutions every fuckin' minute,

it takes rack & pinion steering
& drum brakes & disc brakes
& steel tyres,

it takes one thousand five hundred kilos of metal
moving, always moving
in 48 second loops on the assembly-line,

painted & cut & bolted & fed
by workers.

It
takes
workers

on 9 hour shifts,
one 30min lunch break,
and two 7 minute tea-cum-toilet breaks
(those two-seconds-late-&-pay-cut-breaks)

it takes "if my leg itched, I do not even
have time to scratch it,"

it takes waiting
for one's own fingers

it takes white-hot "discipline" cut by teeth,
welded by metal to townships
with smoke-grey evenings

it takes 13 days of occupation,
months of sit-ins, lock-outs, it takes 147 workers
arrested on manufactured evidence,

to make one of these.

In recent decades, another important feature of the Indian labour movement has emerged, wherein almost all the Central Trade Union Organizations (CTUOs) have come together to form a joint trade union council and organized a series of general strikes, almost one every one-two years. In the leadership of central trade unions, 200,000 workers organized a demonstration in Delhi in February 2012, and 1,000,000 workers across India courted arrest in November 2012. The major demands included raising minimum wages to INR10,000 per month; a decrease in the price of essential commodities; a halt to further privatization of public sectors, universal social security coverage; and compulsory registration of trade unions within 45 days (ITUC 2012). Strikes and demonstrations have increasingly been taking a more violent turn, and so also has the repression. In India, the media completely ignores the labour movement, and therefore reduces the impact of the general strikes and demonstrations.

LABOUR MOVEMENT IN ERSTWHILE SOCIALIST COUNTRIES

China

In China, the labour movement has passed through three phases. In the initial phase, the strikes undertaken almost everywhere in China was the work stoppage in the real sense of the word -- suddenly stopping work but not leaving the workplace. The movement entered its second phase at the beginning of the 21st century. This was seen in the waves of wild -cat strikes in Shenzhen and other cities in 2007-08. In most of these strikes, the strategy was to come out of the workplace peacefully and block the roads, and thereby compelling the government authorities to address their demands. The movement entered in the third phase with waves of strikes in 2010. In these strikes rather than blocking roads, the workers stopped or attempted to stop the production and enter into direct negotiations with the management. The length of the strikes also increased. Most importantly in some of the strikes, the workers openly raised the general demands of labour rights, along with specific workplace demands (Leong and Pratap 2011).

In recent years, the number of strikes both spontaneous and organised increased in China and on average each day around 1,000 workers have been involved in industrial action in Guangdong Province alone. Strikes/ protests are generally dispersed by the armed police and they lead to victimization of workers, in the form of dismissals, black listing, arrests and sometimes also political charges. However, it is worth mentioning that despite all these, there is an increasing tendency, particularly in the local administration, to consider the strikes as a normal affair, and so the level of hostility against the strikes and strikers has been in general reduced to a large extent. This is also one of the reasons that many strikes are emerging successful in terms of compelling the companies for some form and some level of collective

bargaining. The All-China Federation of Trade Unions (ACFTU), the only legal union in China, still avoids direct engagement in workers' collective disputes and protests at the plant level, but some of its branches have started offering legal-aid-related services to workers.

The situation of migrant workers is still the same. They suffer from low wages (half the salary of urban workers) and excessive working hours (Chan 2007). Their precarious situation was reflected in the fire in 2011 in an illegally constructed garment factory near Beijing, in which 18 migrant workers died and 23 others were injured. Later 80,000 migrant workers working in various such factories and small workshops were expelled from the district. During the same period, rumours of a pregnant migrant hawkker allegedly beaten to death led to three days of rioting in south China, the arrest of 19 and detention of 100 migrants. In the same period, in the nearby city of Chaozhou, hundreds of migrant workers, aggrieved on the issue of unpaid wages at a ceramic factory, attacked government buildings and set vehicles ablaze. In 2011-12, there were many important strikes of workers in China, including taxi drivers' strikes against rising fuel prices and stagnant wages, a strike of bus drivers and conductors on the issue of wages and wage setting policies, a strike of 2,000 coal miners on the issue of the closure of Baidong mine, protest demonstrations of hundreds of laid-off textile workers for proper severance pay, a strike of 2,000 truck drivers against rising fuel prices, protest demonstration of workers at the Nanjing Huafei Colour Display System Co. Ltd. against alleged corruption in the factory's bankruptcy, leading to layoffs, and offering very low severance payments, a strike of 4,000 electronics workers of Simone Handbag factory in Panyu, in southern China against low pay, a strike of 8,000 Chinese workers of a Nanjing factory owned by LG of South Korea against the shutting down 80 production lines, and a strike of 2,000 workers at the Guanxing Precision Machinery Product Factory making parts for Japanese watchmaker Citizen Holdings Co. Ltd. against bad working conditions, deductions of pay and overtime (ITUC 2012).

Among the important recent strikes, a furniture workers strike in 2013 at Diweixin Product Factory in Shenzhen is worth mentioning, in order to understand the dynamics of lower ends of the value chains moving to low wage hinterlands with a steady rise in wages in the main industrial zones, such as Shenzhen, and to see how the employers openly violate the labour rights and the police blindly takes their side.

The Diweixin factory was set up by Hong Kong people. Early in 2013, workers in the factory heard that there were plans to move it to another location. This was in line with the emerging trend in Guangdong where more and more factories were moving to other low wage provinces or to low wage Southeast Asian countries to lower the costs of production. On 7th May 2013, some 300 workers went on strike against the planned relocation of the factory, and to demand enough compensation for workers in the event of such a move. But the employers outrightly refused to compensate the workers. The workers obstructed roads and marched to the local government office and submitted their petition on this issue. The strike continued for two weeks. Finally, the employers offered the workers a compensation of RMB 400 for every year of service. However, this was lower than the standard prescribed by law. Angered by the attitude of the employer, the workers collectively marched to the offices of the local authorities to organize a protest demonstration, but they were stopped by the police and many of them

were arrested. The workers continued their strike and protests for the release of the arrested workers. At the end of 2013, a workers' leader called Wu Guijun was still in prison, charged with committing a criminal offence. This was such a naked case of repression of workers that it triggered the concerns of people in China and Hong Kong, as well as attracting international attention, and a strong demand was raised with the Chinese government to release Wu.¹⁵

Vietnam

Vietnam experienced a wave of wildcat strikes since the adoption of the Labour Code in 1995. The difference between China and Vietnam seems to be in the fact that in Vietnam the cadres of the official trade union tend to display stronger support for striking workers and often put pressure on the management to accept the reasonable demands of the strikers, along with persuading the workers to return to work. In response to the wave of wildcat strikes in late 2005, the Vietnam trade union came out openly in support of the workers and went to the extent of criticizing the government for its failure to raise minimum wages. In Vietnam, there is no institutional discrimination against migrant workers as it exists in China, and this helps in building broader solidarity among all workers for taking a collective action (Yoon 2009).

In recent years, the emergence of a vibrant economy as well as a vibrant labour movement in Vietnam has been witnessed. The number of strikes has increased from about 140 cases in 2005 to 387 strikes in 2006, 541 in 2007, 762 in 2008, then slightly declining with 310 cases in 2009, and again showing a steady increase 2010 onwards. During 2010-11 there were about four strikes per week. One interesting phenomenon that emerged is that of repeated strikes in particular factories, especially in foreign invested enterprises such as the Taiwan- owned footwear factory Hue Phong Shoe Company in Ho Chi Minh City, where five large-scale strikes happened from 1997 to 2008. The strikes by and large were peaceful. Generally the workers stopped work and gathered outside the factory gates without creating much disturbance in the area, and therefore they did not invite any large-scale repression by the police. But since legal strikes are still almost impossible, and therefore, the trend of apparently leaderless, wildcat strikes still dominates. They are also successful in getting significant media coverage with a significant number of apparently pro-worker newspapers (Siu 2012).

In 2011, there was an upsurge in the number of illegal strikes, a total of about 1,000, up from 423 in 2010. The reason behind the upsurge in strikes was rising inflation while real wages remaining almost stagnant. One of the most important strikes in the 2011-12 period was a strike by 90,000 workers at the Pou Yuen shoe factory (a supplier of major footwear brands such as Adidas) demanding a wage hike. The striking workers faced large-scale victimization in terms of dismissals and arrests. Another worth mentioning strike is that of My Phong shoe factory strike in the Tra Vinh province in 2010 in which 10,000 workers took part. Three workers and rights activists participating in the strike were sentenced to seven to nine years' imprisonment. They have also been subjected to physical torture in prison. Do Thi Minh Hanh, a young woman of 26, has lost her hearing in one ear, and has swollen joints and stomach pains as a result of beatings received in detention (ITUC 2012).

In 2013, several strikes were held which were met with violence. In one strike at a Taiwanese-owned auto parts factory in Hanoi where workers were seeking a wage hike, one worker was killed.¹⁶ There is another interesting case reflecting the plight of women workers in Vietnam. There had been an increasing number of complaints against the employers dismissing female workers after getting pregnant. The labour law of Vietnam has a special provision directing to avoid pregnant women and new mothers for working extra shifts. For employers it means availability of lesser number of workers for working in extra shifts. Therefore, the employers simply dismiss the women workers when they are pregnant and avoid hiring pregnant women and new mothers. In 2013, the Doojung factory, a South Korean cosmetics producer, openly announced its plans to dismiss women workers in their sixth month of pregnancy for failing to meet company regulations on working extra shifts. It also banned all female employees from having babies for the next three years.¹⁷ According to the workers' accounts quoted in newspapers, the workers were paid an extra VND18,000 (USD0.86) an hour for overtime work, and according to contract that they signed, they were allowed to take off Sundays but had to then work from 7 am Saturday to 8 am Sunday. The discontent of workers in Doojung factory was growing for a long time against such exploitative practices and in April 2013, they went on a strike.¹⁸

LABOUR MOVEMENT IN ADVANCED ASIAN ECONOMIES

The labour movement has been advancing in almost all the countries in this group, mainly focused on issues related to factory closures, the rise in the number of low paid, irregular workers, wage hikes and against increasing incidents of union busting. In Taiwan, there have been a wave of protests against anti-union dismissals¹⁹, and a series of protest actions by workers of closed factories under the banner of the National Alliance for Workers of Closed Factories. In one action in February 2012, 100 workers paralyzed the Taiwan Railways Administration system by jumping off the platforms and laying on the tracks at the Taipei Railway Station.²⁰ In Singapore, Chinese bus drivers went on strike in 2012, for equal pay and payment for overtime. There were strong demonstrations in Malaysia in 2012, demanding an increase in minimum wages and an end to union busting, and in 2013 the electronics workers took to the streets against the refusal to recognize their union.²¹ In Japan, one of the longest strikes of teachers of the Berlitz General Union Tokyo (Begunto, associated with the National Union of General Workers, NUGW) which lasted for almost two years (2007-08), attained finality at the end of 2012 after the High Court decided in their favour. In a similar case of the dismissal of a teacher from Yokohama, the struggle continues and the case is pending at the Labour Commission.²² After a long time, many of the industrial federations in Japan are gearing up for a struggle on wage hikes. Recently, in January 2014, the Japanese Electrical, Electronic & Information Union (with 600,000 members) and Toyota Motor Workers' Union (with 63,000 members) have put forward strong demands for a wage hike.²³ The Hong Kong dock workers strike in 2013 clearly gave an indication that labour in Hong Kong is coming back into action. The long struggle of dock workers in the first half of 2013 injected new life into all the trade unions and activists in the territory and that was in itself a victory.

South Korea

However, among this group of countries, South Korea clearly emerges as the major flash point of the labour movement. There are several reasons for this. The country already has very high levels (more than 50 percent) of casualization of labour. More than five million workers, or one-third of the South Korean workforce, have already been made contract workers, receiving just 60 percent of the average wages of permanent workers. Casual/contract workers have very limited rights to organize and collective bargaining. A whole anti-union environment has been created. On the one hand, new labour laws are more anti-labour in nature providing rights to employers for termination of collective bargaining agreements and reducing the number of full time workers in union along with not allowing the temporary workers to be part of union. On the other hand, big corporations, such as Samsung and POSCO, openly follow a 'No Union' policy. Moreover, incidences of crackdowns on trade unions have been rising, both in the form of physical repressions and also in the form of lawsuits against them. It is interesting to note that the compensation being claimed by management over labour disputes is increasing despite an agreement eight years ago between labour and management restricting large indemnification suits, after a series of worker suicides resulted from these large lawsuits. Several trade unionists were jailed in 2011 for strike-related activity. The major concern of workers in this period has arisen from issues related to industrial restructuring, privatization, closure of factories and layoffs, which are leading to mass unemployment of workers. The government and the courts believe that restructuring, privatization and layoffs fall under the category of management rights, and therefore, strikes on these issues are illegal. For example, Hanjin Heavy Industries undertook restructuring that resulted in the loss of 400 jobs, including 230 voluntary resignations and 170 dismissals. The workers' strike against this was declared illegal. More interesting, the strike of in-house subcontracting workers at Hyundai Motor demanding regular employee status in accordance with a Supreme Court ruling was also declared illegal. On the one hand, a legal strike is almost impossible, and on the other hand, in the case of an illegal strike the trade union has to face law suits by employers claiming painful amounts of compensation from workers and activists who participated in the strike (ITUC 2012).

Compelled by these situations, the South Korean labour movement is aggressively moving forward to build a strong working class power, and increasingly taking a radical shape. There have been a number of strikes worth mentioning: A strike in 2010 by irregular workers at Hyundai and the occupation of its Ulsan, Asan and Jeonju plants demanding regular worker status, the strike and occupation of the Yoosung factory in 2009; a strike by the security guards working at U.S. military bases in South Korea in 2011; the Hanjin workers' strike in 2010; a strike by the Kumho Tyre workers in 2011; the Hongkik University contract cleaners' strike in 2010; Department store workers' strike in 2010; railway workers' strike in 2011; and the Hyundai motor workers' strike in 2013. The dynamics of the South Korean labour movement is more powerfully reflected in two most important struggles of the past decade, the SsangYong workers' struggle in 2009 and again in 2012-2013, and the most recent railway workers strike against privatization held in December 2013 and January 2014.

The SsangYong Motor workers' strike and factory occupation, which lasted 77 days in 2009, is one of the most protracted workers' struggles of the decade. A total of 976 workers seized the auto plant on May 22, 2009 and held it in the face of repeated quasi-military assaults. Even if this struggle ended largely in defeat in terms of direct gains, it was a victory in terms of boosting the morale of Korean workers.

Three years before the 2009 strike, SsangYong Motor Company had been taken over by China's Shanghai Automotive Industry Corporation. The downsizing of the workforce started just after the takeover and within three years, the number of workers had been cut from 8,700 to 7,000. Then, the company filed for bankruptcy and proposed a restructuring, offering the plant as collateral for further loans. Subsequently, the court approved the bankruptcy plan, pending adequate layoffs to make the company profitable again. The workers protested against proposed lay-offs. On May 22, when the list of workers to be laid off was announced, the SsangYong Workers' Union (affiliated to the Korean Metal Workers Union, KMWU) went on strike and the 1,700 workers, who were to be laid off, occupied the plant demanding no layoffs, no casualization and no outsourcing. The company wanted to force 1,700 workers into early retirement and had already fired 300 casuals. The workers who were proposed to be laid off had been working in the factory for 15-20 years. For the next three weeks, until the middle of June, about 1,000 workers occupied the plant in protest. About 5,000 workers, who were not to be laid off, stayed at home, directly or indirectly supporting the occupation.

To suppress this struggle, various measures were taken, including an anti-strike rally of more than 1,500 people outside the factory gates, mainly attended by the 1,000 supervisory staff, 200 hired personnel and 300 workers from those not proposed to be laid off. In addition, 400 riot police was stationed there. Trade unions in the region responded against this and 700-800 workers reached out to defend the SsangYong workers. There were consistent attempts by the police to arrest the workers and recapture the plant, and therefore the occupying workers also made plans for an armed defense against these attempts. A full-fledged offensive against the workers occupying the factory was launched on 26-27 June, when riot police entered the factory by using force. At this time, a strong solidarity among trade unions and other sections of the populace emerged and demonstrations were organized in the form of street campaigns, a four-hour general strike by the KMWU during which metal workers from nearby plants rallied in front of SsangYong factory gate and other rallies. On 1 July, water and gas supply to the occupied plant were cut off by the government to compel the workers to come out. All access to the plant was blocked and negotiations collapsed. For sustenance, the workers were dependent on rain water in whatever amount they could get. On 4 July and 11 July, the KCTU (Korean Confederation of Trade Unions) held nationwide labour rallies in support of the SsangYong workers' struggle. In addition, 927 activists held a one-day hunger strike in Seoul on 11 July. On 16 July, 3,000 KMWU members organized a rally, but they were blocked by police and not allowed to go to the factory. Of them, 82 workers were arrested. The big battle began on the 21st, when the police began repeatedly dropping tear gas from helicopters onto the workers, and riot police again tried to enter the paint shop. Days of fighting ensued, but by the end of July, only about 700 workers were left in the plant, many of them injured, and with only rice

balls to eat and rain water to drink. On 25 July, the KCTU rallied workers and other supporters, who armed with iron pipes and stones, marched on the factory gates and fought with the riot police, however, the police forced them to retreat. On 27 July, SsangYong workers held a press conference and another rally in front of the paint plant and put forward their demands, including the withdrawal of the police, direct negotiations with management and government, and the release of the results of the investigation into illegal effluence resulting from the use of hybrid diesel engine technology. However, on 1 August, electricity to the paint department was finally cut off by the police, signaling the start of the final battle. This lasted from 3-5 August, when the occupiers were finally overtaken and the occupation of the factory came to an end. The defeat was also reflected in the final negotiations. The local union president was forced to agree to early retirement for 52 percent of the occupiers, with the remaining 48 percent to be laid off for one year without pay, after which they might be rehired.²⁴

Many workers who occupied the factory were arrested and some were sentenced to years in prison. They faced such mental tortures that five workers committed suicide and five died from cardiovascular diseases, such as heart attacks or brain haemorrhages.²⁵

Rail workers' strike in Korea, reflects on another interlinked dimension of Korean labour movement. In early December 2013, the Korean government approved a license for a new subsidiary for the state-run rail operator Korea Railroad Corp (known as Korail) to run the new Korea Train Express (KTX). Employees of Korail saw this as the first decisive move toward the privatization of Korean railway system. In protest, about 15,000 union members who formed about 45 percent of the workforce went on strike on 9 December. Rather than listening to their demands and concerns, Korail hired an army of scabs from its railway engineers' school and other pools, and declared that it would dismiss 4,213 unionists and also filed a damages lawsuit against 194 union leaders. A court issued arrest warrants for 10 union leaders on charges of obstruction of business operations. On the same day the police raided the union's offices nationwide. On 22 December, 4,000 riot police sealed off a Seoul building leased by the KCTU and a small independent newspaper. Riot police also conducted a 10-hour, door-to-door, warrant-less raid in an 18-story building in search of strike leaders. The massive raid on the KCTU prompted the Korail union leaders to publicly seek sanctuary in a Buddhist temple in central Seoul. In the face of this large-scale repression, workers and people from all sections of society all over Korea poured out onto the streets to show their discontent. At the same time, donations poured into the union and to the temple where the leaders were encamped. The KCTU called for a general strike on 25 February. Participation in the strike was amazing. Nearly all sections of society, particularly the youth, took part in large numbers. According to some estimates more than 60 percent of young people in their 20s and 30s supported the strike (San 2014).

From these situations people got a clear message that the attack on Korail workers and unions was actually an attack on democracy and basic public services. Thereafter, the protest demonstrations took on a political dimension, which was clearly reflected in a mass demonstration of 100,000 protesters in Seoul on 28 December. The protesters raised slogans against the clampdown on labour, privatization of the nation's railway system, as well as against government's election manipulation scandal.²⁶

The strike ended on 30 December, after two major political parties agreed to form an ad-hoc committee in the National Assembly to study the feasibility of rail privatization. Korail management was not part of the compromise, and instead has been seeking an injunction to seize the assets of the union and its leaders as part of its 11.6 billion won (US\$10.8 million) damages suit. There was also no clarity on whether Korail had withdrawn its plan to fire the unionists. It had summoned 256 unionists to a penalty commission, a routine step before dismissal. The prosecution had also moved for the arrest and detention warrants for eight union leaders who had no option but to surrender to the police after the strike (San 2014).

CONCLUSION

Worker activism has become the new norm as protests and strikes of various kinds have erupted across Asia. This has been actually a burning reality of the past two decades. Chan (2007), for example, gives a vivid description of this in South China. Instead of ignoring or detesting this phenomenon as is usually done, it should be seen as the desperate way of seeking a life of decency and dignity on the part of the working people in a contradictory world.

But, how will the workers manage to preserve their humanity in a hostile, inhumane working environment? Will they ever come together and oppose the current situation? Is sabotaging production the only way to stop the exploitation of human beings by other human beings? Such issues are cinematically examined in South Korea (Guarneri 2014) even as intellectuals like the mainstream economists are not concerned about workers' struggles. Economists, unfortunately, suffer from a peculiar mental retardation; they have not grasped, *inter alia*, two factors that make labour unique: first, "Employment is indeed an exchange (trading labour for money) but it is a very unequal exchange."; and secondly, "Labour is alive. Labourers are living, thinking beings, who can influence their surroundings and circumstances. One important consequence of this is that they always find ways—individual or collective—to resist work arrangements or practices they believe are unfair" (Stanford 2008).

(Acknowledgement: Much of the paper is based upon the work published by Surendra Pratap (2014). *Emerging Trends in Factory Asia: International Capital Mobility, Global Value Chains, and the Labour Movement*, Hong Kong: Asia Monitor Resource Centre)

NOTES

- 1 *GMAC Strike Report, Garment Manufacturers Association in Cambodia*, <http://gmac-cambodia.org/strike/>
- 2 *Cambodia: Striking garment workers killed in brutal repression*, <http://links.org.au/node/3665>; *Cambodia garment workers' strike turns deadly*, <http://www.aljazeera.com/news/asia-pacific/2014/01/cambodia-garment-workers-strike-turns-deadly-2014134464180721.html>; *Cambodia's Garment Industry Resumes Production After Strike Ends*, <http://online.wsj.com/news/articles/SB10001424052702303433304579304154193538792>

3. *ITUC Statement on Cambodia* (2014, January 13). Retrieved from <http://www.ituc-csi.org/ituc-statement-on-cambodia-13>
4. The opposition parties in Cambodia had challenged the results of general elections held in July 2013 on the grounds that there were large scale irregularities and demanded for independent investigations
5. Hruby, Denise (2014, January 18). EU Calls for International Probe Into Election; *The Cambodia Daily*. Available online at <http://www.cambodiadaily.com/archives/eu-calls-for-international-probe-into-election-50850/>
6. *Ibid.*
7. Wages rise as strike goes on, *The Jakarta Post*, retrieved from <http://www.thejakartapost.com/news/2013/11/02/wages-rise-strike-goes.html>
8. *National Strike of Indonesian Workers On 28, 29, 30 October 2013*; <http://amrcblog.wordpress.com/2013/10/18/national-strike-of-indonesian-workers-on-28-29-30-october-2013/>
9. *Resistance is high; garment workers force shutdown in 350 factories*, <https://libcom.org/news/resistance-high-garment-workers-force-shutdown-350-garment-factories-18062012>; *Striking Bangladeshi garment workers win a 77% pay rise*, <https://libcom.org/blog/bangladeshi-garment-workers-win-77-pay-rise-14112013>; *Bangladesh poised to hike garment wages, but may not end strikes*; <http://uk.reuters.com/article/2013/10/21/uk-bangladesh-garments-wage-idUKBRE99K02O20131021>; *Clean Clothes Campaign, Bangladesh Minimum Wage*; <https://www.cleanclothes.org/livingwage/bangladesh-minimum-wage>
10. Barta, Patrick (2013, September 11). Bangladesh Workers Face Fight to Form Unions, *The Wall Street Journal*. Retrieved from <http://online.wsj.com/news/articles/SB10001424127887323455104579012201357331012>
11. *30,000 spinning mill workers on strike in Panipat*; <http://www.financialexpress.com/news/story/172796>
12. *Textile production in Tirupur cluster hit by strike*; <http://www.thehindu.com/todays-paper/textile-production-in-tirupur-cluster-hit-by-strike/article2736914.ece>; *Powerloom workers strike in Coimbatore and Tirupur*; http://www.fibre2fashion.com/news/textile-news/india/newsdetails.aspx?news_id=102677
13. ITUC (2012). Annual Survey of Violations of Trade Union Rights
14. HR manager of the plant died in the factory on 18th July when clashes with workers was going on, and mass arrests of workers followed.
15. This information is based on a presentation by Samuel Li on Diweixin Product Factory workers strike in a meeting at AMRC, Hong Kong, in December 2013. Samuel Li works with Asia Monitor Resource Centre, Hong Kong
16. *Vietnamese worker killed at Taiwan factory strike in Hanoi*; <http://www.amchamvietnam.com/4611/vietnamese-worker-killed-at-taiwan-factory-strike-in-hanoi/>

17. *Foreign firms in Vietnam seeking to sack pregnant workers*; <http://www.thanhniennnews.com/index/pages/20130519-foreign-factories-in-vietnam-want-to-sack-mothers-to-be.aspx>
18. *Workers strike against mistreatment in Hanoi industrial park*; <http://www.dtinews.vn/en/news/017004/28597/workers-strike-against-mistreatment-in-hanoi-industrial-park.html>
19. *Countries at risk: 2013 Report on Violations of Trade Union Rights*; <http://www.ituc-csi.org/countries-at-risk-2013-report-on>
20. *Workers' alliance vows to keep up fight for owed pay*; <http://www.taipeitimes.com/News/taiwan/archives/2014/02/05/2003582792>
21. *Countries at risk: 2013 Report on Violations of Trade Union Rights*; <http://www.ituc-csi.org/countries-at-risk-2013-report-on>
22. *2007–08 Berlitz Japan strike*; http://en.wikipedia.org/wiki/2007%E2%80%9308_Berlitz_Japan_strike
23. *Electric industry, Toyota unions to make robust pay demands this year*; <http://www.globalpost.com/dispatch/news/kyodo-news-international/140128/electric-industry-toyota-unions-make-robust-pay-demand>
24. *Ssangyong motors strike in South Korea ends in defeat and heavy repression*; <https://libcom.org/news/ssangyong-motors-strike-south-korea-ends-defeat-heavy-repression-17082009>
25. *Death toll mounts after defeat of 2009 Ssangyong strike*; <https://libcom.org/news/death-toll-mounts-after-defeat-2009-ssangyong-strike-15042011>
26. *100,000 South Koreans Protest Election Scandal, Labor Clampdown*; <http://globalvoicesonline.org/2013/12/28/photos-100000-south-koreans-protest-election-scandal-labor-clampdown/>

REFERENCES

1. Amritpal (2011). *A Report on Ludhiana Textile Workers Strike and the Owners' Propaganda*. <http://sanhati.com/articles/4246/>
2. Bhatti, K. (2008). Pakistan: 50,000 Textile Workers Strike. *The Socialist Newspaper*, 23 July. <http://www.socialistparty.org.uk/articles/6314/23-07-2008/pakistan-50000-textile-workers-strike>
3. Bose. Annabhajula J.C. (2012). *Labour Relations in a Liberalized Industry: A Study of Indian Automobile Workers*. Unpublished PhD Thesis submitted to Department of Economics, B.R. Ambedkar Bihar University, Muzaffarpur, <https://gurgaonworkersnews.files.wordpress.com/2012/09/full-thesis-in-pdf.pdf>
4. Brockway, George P. (2001). *The End of Economic Man: An Introduction to Humanistic Economics*. New York and London: W.W. Norton & Company.

5. Chan, Chris (2007). Emerging Patterns of Workers' Protest in South China. Working Paper, *Centre for Comparative Labour Standards and Industrial Relations Research Institute*, University of Warwick.
6. Grint, Keith, ed. (2000). *Work and Society: A Reader*. Polity Press.
7. Guarneri, Michael (2014). Japanese Zombies and Korean Factory Workers: Will the Asian Working Class Go to Heaven?. *Criticwire*, August 18.
8. ITUC (2012). *Annual Survey of Violation of Trade Union Rights*. <http://survey.ituc-csi.org/Cambodia.html#tabs-3>
9. Katyal, Akhil (2015). *Maruti Swift*, <http://akhilkatyalpoetry.blogspot.in/2015/03/maruti-swift.html>, March 30.
10. Leong, A. and Pratap, S. (2011). *China's Capitalist Development and its Implications for Labour with Special Reference to the Shenzhen SEZ*. AMRC, Hong Kong.
11. Mahmood, K. (2012). *Pakistan: Historic Victory for Workers' Rights and Democracy*. <http://www.pambazuka.org/en/category/features/83749/print>
12. Mallick, A. (2013). *Faisalabad Loom Workers' Strike: 'God is Sovereign and God Asks us to Fight for Justice'*. Available at <http://www.fairobserver.com/article/faisalabad-loom-workers-strike-god-is-sovereign-and-god-asks-us-to-fight-for-justice>
13. Mufakhir, A. (2013). *Workers' Struggle in the Electronics Industry in Indonesia: The Case of Samsung Electronics Indonesia*, in AMRC. *Labour Rights in Hi Tech Electronics*. *Asia Monitor Resource Centre*, Hong Kong.
14. Pratap, S. (2010). Trade Union Repression in India. *AMRC Research Paper*. <http://www.amrc.org.hk/node/1201>
15. Pratap, S. (2011). Bangladesh Garment Industry in Turmoil Workers No More Willing to Perish in the Profit Machine. Working Paper, *Centre for Workers Education*, New Delhi; <http://workerscentre.files.wordpress.com/2011/07/bangladesh-garment-industry-in-turmoil.pdf>
16. Pratap, S. (2013). *Significance of Maruti Suzuki Struggle*. Paper presented in Bi-annual Conference of ATNC Monitoring Network in Jakarta.
17. Pratap, Surendra (2014). Emerging Trends in Factory Asia. *Asia Monitor Resource Centre*, Hong Kong.
18. San, Yi (2014). *South Korea Rail Workers Strike against Privatization*; : <http://labornotes.org/2014/01/south-korea-rail-workers-strike-against-privatization#sthash.5YgIfLmk.dpuf>
19. Siu, Kaxton (2012). *The Vietnam Strike Wave*; available at <http://www.amrc.org.hk/node/1240>
20. Sprague, T. (2012). *Indonesia: First General Strike in 50 Years*. <http://www.marxist.com/indonesia-first-general-strike-in-50-years.htm>

21. Stanford, Jim (2008). *Economics for Everyone: A Short Guide to the Economics of Capitalism*. Fernwood Publishing, Halifax and Winnipeg and Canadian Centre for Policy Alternatives.
22. Tariq, F. (2010). *Pakistan Textile Worker's Strike Continues*; <http://weknowwhatsup.blogspot.in/2010/07/pakistan-textile-workers-strike.html>
23. Tazreen, A. and Sabet, D.M. (2013). Worker Safety in Bangladesh: Looking beyond Garments; *The Center for Enterprise Society* (CES), University of Liberal Arts, Bangladesh; [http://www.ulab.edu.bd/CES/documents/Worker_Safety\(sm\).pdf](http://www.ulab.edu.bd/CES/documents/Worker_Safety(sm).pdf)
24. Yadav, Anumeha (2015) Maruti Strikes. *Himal Southasian*, March 27, <http://himalmag.com/maruti-suzuki-workers-strikes/#sthash.nLP4lYZD.dpuf>
25. Yoon, Youngmo (2009). *A Comparative Study on Industrial Relations and Collective Bargaining in East Asian Countries*. Working Paper No. 8, Industrial and Employment Relations Department.

INTRADAY LEAD/LEG RELATIONSHIPS BETWEEN THE FUTURES AND SPOT COMMODITY MARKET

Gurmeet Singh*

ABSTRACT

The aim of this paper is to investigate the lead-leg relationships between non- precious metals – nickel and zinc-on Multi Commodity Exchange (MCX) and agricultural commodities -pepper and soybean-on National Commodities & Derivatives Exchange (NCDEX) using Johansen's co-integration test, VECM and Granger causality test. The analysis used daily data on spot prices and near month futures prices of all the four commodities over the period from April 2011 to April 2013 which is obtained from MCX and NCDEX website. The study concludes that all the series of spot and futures prices are co-integrated of order one, and exhibit a stable long-run equilibrium relationship. The results of VECM show that there is a bi-directional causality in spot and futures market but the futures market is found to be more sound in terms of discounting new information than the spot market. The results of Granger causality suggest that bi-directional causality exists between spot returns and future returns of nickel in short run. Whenever zinc and pepper future returns, Granger causes spot returns but not the other way round. Moreover, whenever Soybean spot returns, Granger causes future returns in the short run.

Keywords: Co- integration Test, Commodity Market, Granger causality, Market Efficiency, Multi Commodity Exchange, VECM Futures Markets.

JEL Code Classification: C32, G14

INTRODUCTION

In India, future trading in commodities started in 1875 when a contract in cotton was introduced by Bombay Cotton Trade Association. Chicago Board of Trade with standardized contracts on various commodities was the first organized commodity exchange at international level. It was established in 1848. Indian commodity markets are regulated by the Forward Market Commission (FMC). At present there are 17 recognized commodity exchanges in India

*Gurmeet Singh is Assistant Professor at the Unitedworld School of Business, Uvarsad, Gandhinagar, Gujarat.
Email: prof.gurmeetsingh@live.com

and of these, 6 commodity exchanges carry operations nationwide and trading in these national exchanges is carried on in different commodities whereas other 11 exchanges are regional exchanges and in these regional exchanges trading is carried on in limited commodities.¹ Multi Commodity Exchange of India Limited (MCX) started operations in November 2003. MCX is India's leading commodity futures exchange with a market share of about 82.82 per cent in terms of the value of commodity futures contracts traded in FY2014-15. It is the world's third largest commodity futures exchange in terms of the numbers of contracts traded in CY2012. MCX offers trading in varied commodity futures contracts across segments including bullion, ferrous and non-ferrous metals, energy and agricultural commodities.² National Commodity & Derivatives Exchange Limited (NCDEX) started operations in December 2003. As on March 30, 2013, the NCDEX offered 31 contracts for trading of following items: 23 agricultural commodities, 3 precious metals, 2 energy, 1 polymer and 2 other metals. The top 5 commodities, in terms of volume traded at the Exchange, were Soya oil, Soybean, RM seed, Chana and Castor Seed.³ Out of these non-precious metals - nickel and zinc are selected from MCX and agricultural commodities -pepper and soybean are selected from NCDEX for the present study.

Nickel is a metal with a bright future as it is the main alloying metal needed in the production of certain types of stainless steel. While zinc is the fourth most common metal in use, after iron, aluminium and copper in terms of the metal's annual production. Zinc can be recycled indefinitely, without loss of its physical or chemical properties. It is present in a wide variety of foods, and found particularly in association with protein foods. Nickel and zinc prices in India are fixed on the basis of the rates that rule on the international spot market, and Indian Rupee and US Dollar exchange rates. The annual demand for nickel in India is around 40,000 MT and its market in India is totally dependent on imports. In India, the primary end use of zinc is in the galvanising and coating sectors, which currently account for an estimated 57% and 16% of the total production respectively.⁴ Black pepper (*Piper nigrum*) is a flowering vine in the family Piperaceae. Hot and pungent black pepper is one of the most popular spices in the world. In India, harvesting starts from December and extends till March whereas the arrivals in the physical markets start from February. World pepper production is around 2.6 MT to 3.1 MT per year. Vietnam is the world's largest producer and exporter of pepper, producing almost one-third of the world's pepper crop. Other major producers include India (19%), Brazil (13%), Indonesia (9%), Malaysia (8%), Sri Lanka (6%), China (6%), and Thailand (4%). India produces about 50,000 MT of pepper every year with Kerala & Karnataka accounting for more than 95% of the domestic production. Indian pepper is traded at a premium in international markets owing to its superior quality.⁵ Soybean (*Glycine max*) is called as Golden Bean. The plant is classed as an oilseed and is an important global crop. The processed soybean is the largest source of protein feed and second largest source of vegetable oil in the world.⁶ USA, Brazil, Argentina, China and India are the largest soybean producing countries in the world. Soybean is largest grown oilseeds in the world and other major source of oilseeds are rapeseed (13%), cottonseed (10%), peanut(8%), sunflower (7%) seed and palm kernels. Among major oilseeds, higher percentage of meal is extracted from soybean (82%). The prices of soybean are determined by demand and supply of oil and meal.⁷ Contract specifications of the selected

commodities are presented in Table 1 & 2. It is clear from the Tables that futures contracts for the two commodities under the study have same specifications except trading unit, maximum order size, ticket size and delivery unit.

Table 1: Some specifications of contracts for nickel and zinc traded on MCX

	Nickel	Zinc
<i>Symbol</i>	NICKEL	ZINC
<i>Contract start day</i>	First day of contract launch month. If first day is a holiday then the following working day.	First day of contract launch month. If first day is a holiday then the following working day.
<i>Last trading day</i>	Last calendar day of the contract expiry month. If last calendar day is a holiday or Saturday then preceding working day.	Last calendar day of the contract expiry month. If last calendar day is a holiday or Saturday then preceding working day.
<i>Trading period</i>	Mondays through Friday	Mondays through Friday
<i>Trading unit</i>	250 Kg.	5 Tons
<i>Quotation/base value (kg)</i>	1 Kg.	1 Kg.
<i>Maximum order size (MT)</i>	24 MT	100 Tons
<i>Tick size (minimum price movement, paise/kg)</i>	10	5
<i>Initial margin</i>	Minimum 6 % or based on span whichever is higher	Minimum 5 % or based on span whichever is higher
<i>Delivery unit</i>	3 MT with tolerance limit of +/- 1%	10 Tons with tolerance limit of +/- 1% (100 Kg.)
(Source: www.mcxindia.com)		

Table 2: Some Specifications of Contracts for Pepper and Soybean Traded on NCDEX

	Pepper	Soybean
<i>Symbol</i>	PPRMLGKOC	SYBEANIDR
<i>Opening of contracts</i>	Trading in any contract month will open on the 10 th of the month. If the 10 th day happens to be a non-trading day, contracts would open on the next trading day.	Trading in any contract month will open on the 1 st day of the month. If the 1 st day happens to be a non-trading day, contracts would open on next trading day.

<i>Due date/Expiry date</i>	20 th day of the delivery month. If 20 th happens to be a holiday, a Saturday or a Sunday then the due date shall be the immediately preceding trading day of the Exchange, which is other than a Saturday.	20 th day of the delivery month. If 20 th happens to be a holiday, a Saturday or a Sunday then the due date shall be the immediately preceding trading day of the Exchange, which is other than a Saturday.
<i>Trading period</i>	Mondays through Friday	Mondays through Friday
<i>Trading unit</i>	1000 kgs (=1 MT)	10 MT
<i>Quotation/base value (kg)</i>	Rs. Per Quintal	Rs. Per Quintal
<i>Maximum order size (MT)</i>	50 MT	500 MT
<i>Tick size (minimum price movement)</i>	Rs. 5/-	Rs. 1
<i>Initial margin</i>	Minimum 5 %	Minimum 5 %
<i>Delivery unit</i>	1000 kgs (=1 MT)	10 MT
(Source: www.ncdex.com)		

Price discovery is the process through which markets attempt to reach equilibrium prices (Schreiber & Schwartz, 1986). In a static sense, price discovery implies the existence of equilibrium prices. In a dynamic sense, the price discovery process describes how information is produced and transmitted across the markets. It is often believed that futures markets potentially provide an important function of price discovery. If so, then futures prices or movements thereof should contain useful information about subsequent spot prices; beyond that already embedded in the current spot price (Wahab & Lashgari, 1993). The literature, as reviewed in the next section, focuses on whether futures rather than cash markets are the primary source for price discovery.

LITERATURE REVIEW

The lead-lag relation between price movements of stock index futures and the underlying cash market illustrates how fast one market reflects new information relative to the other, and how well the two markets are linked. In a perfectly frictionless world, price movements of the two markets are contemporaneously correlated and not cross-auto correlated. However, if one market reacts faster to information, and the other market is slow to react, a lead-lag relation is observed (Chan, 1992). In an efficient market, information processing should be expeditious and the most efficient market should lead the others. Hence, information transmission or price discovery is an indication of the relative market efficiencies of related assets. Therefore, it is important to determine the nature and location of price discovery (Bhatia, 2007). The most common explanation why a lead-lag relationship between the two markets is observed is that it is less costly for traders to exploit information in the futures market

since transaction cost is lower and the degree of leverage attainable is higher. A lead in the futures prices implies that price is being discovered first in that market (Chaihetphon & Pavabutr, 2010).

Oellermann and Farris (1985) analysed daily closing prices of the nearby live cattle contract on Chicago Mercantile Exchange (CME) and average daily cash price of 1,100–1,300-lb. choice steers in Omaha from 1966 through 1982 by separating the time into three spans: 1966–1972, 1973–1977 and 1978–1982 and reached the conclusion that the futures market is the centre of price discovery. Oellermann *et al.* (1989) analysed the daily closing prices of the live cattle and feeder cattle futures contracts traded on CME for a period from 1979 through 1986 by applying Granger causality test and reached the conclusion that feeder cattle futures prices generally lead cash prices in incorporating new pricing information. Koontz *et al.* (1990) analyzed data on cash markets and the live cattle futures market over the three time periods between January, 1973 and December, 1984. By applying Granger causality test on weekly prices they reached the conclusion that the price discovery is dynamic and cash markets have decreased their reliance on the futures market as an overall price discovery mechanism but the futures market is relied upon to register information which emerges late in the week and is reflected in the cash markets the following week. Quan (1992) analyzed monthly data of crude oil spot and 1 month and 3 months futures prices from January, 1984 to July, 1989 by applying Garbade and Silber Approach and error correction model (ECM) and concluded that spot market dominates the futures market in incorporating new information. Chan (1992) studied lead-lag relationship between intraday futures and cash index prices for two sample periods—August, 1984–June, 1985 and January, 1987– September, 1987. Data on MMI and an index comprising of 20 actively traded stocks have been analyzed. Lead-lag relationship (a) under bad news and good news, (b) under different intensities of trading activity, and (c) under market wide movement has been examined and the conclusion reached is that there is an asymmetric lead-lag relationship between the two markets with the strong evidence that futures index leads the cash index and weak evidence that the cash index leads the futures.

Wahab and Lashgari (1993) analyzed daily closing values of stock index and stock index futures prices for both S&P 500 and FT-SE 100 indices from 1988 to 1992, by applying Vector ECM (VECM) and reached the conclusion that feedback relationship exists between cash and futures markets for both the indices but spot to futures lead appears to be more pronounced across days relative to the futures to spot lead. Raju and Karande (2003) studied price discovery between spot and futures markets by analyzing daily closing values of S&P CNX Nifty futures and spot prices from June, 2000 to October, 2002 by applying VECM and reached the conclusion that price discovery occurs in futures market. Figuerola-Ferretti and Gonzalo (2006), in their study on London Metals Exchange (LME) traded metals - aluminum, copper, nickel, lead and zinc by applying VECM and Permanent Transitory Decomposition on daily spot and 15-month futures prices from January, 1989 to mid-June, 2006 concluded that in case of aluminum, copper, nickel and zinc, price discovery occurs in futures market and in case of lead it occurs in spot market. Karande (2006), in his study on castor seed Futures market in India, analyzed the data for two periods from 1985 to 1993 and 1994 to 1999 for March, June, September and December contracts separately as well as for pooled data. By applying

VECM he reached the conclusion that there exists bi-directional causality in Mumbai and in Ahmedabad, Futures market dominates the Spot market.

Gupta and Singh (2007) analyzed daily closing values of Nifty Futures Index, stock futures (included in Nifty) and spot prices from 12 June 2000 to 30 June 2006 by applying Granger causality test and VECM and reached the conclusion that Futures market leads Spot market. Bhatia (2007) analyzed high frequency data (5 min data by filtering tick by tick data) for Nifty Spot Index and Nifty Futures Index from 1 April 2005 to 31 March 2006 by applying ECM and pair wise Granger causality test and reached the conclusion that there exists bidirectional causality in spot and futures index prices. Gupta and Singh (2009) analyzed high frequency (5 min interval) data for Nifty and most liquid fifty individual stocks on NSE from April 2003 to March 2007 by applying Granger causality test, VAR and VECM and reached the conclusion that price discovery takes place in both the markets; but Futures market has been found to be strongly causing the cash market. Karmakar (2009) analyzed daily price series of S&P CNX Nifty spot and the Nifty futures from 12 June 2000 to 29 March 2007 by applying VECM. The study concluded that bi-directional causality exists in futures and spot prices but futures market is found to be more information efficient than the underlying spot market. Chaihetphon and Pavabutr (2010), by applying VECM and information share on daily futures prices and spot prices from November 2003 to December 2007 for standard contract and mini contract of gold, traded on MCX, concluded that futures prices lead spot prices for both standard as well as mini- contracts. Kumar and Arora (2011) studied the price discovery role of Futures market in precious metals. By applying Johansen co-integration test and Granger causality test on daily closing values of spot and the nearby futures contract of gold, traded on MCX, from June 2005 to December 2009, they reached the conclusion that the series of spot and futures prices are co-integrated and the Futures market plays an important role in price discovery.

The research studies reviewed above are concentrated on stock market and in case of commodity markets these are concentrated on precious metals or agricultural commodities. Based on the above literature review; it is found that there is no study regarding non- precious metals like nickel and zinc traded on MCX and agricultural commodities like pepper and soybean traded on NCDEX. To the best of author's knowledge there is hardly any study that analyzed data of nickel and zinc on MCX and pepper and soybean on NCDEX. The present study is an attempt to fill this gap.

DATA & METHODOLOGY

The aim of this paper is to investigate the lead-leg relationships between non- precious metals – nickel and zinc on Multi-Commodity Exchange (MCX) and agricultural commodities - pepper and soybean on National Commodities & Derivatives Exchange (NCDEX). To accomplish the research objective, daily data on spot prices and near month futures prices ranging from April 2011 to April 2013 are obtained which comprises 444 data points for the analysis. The choice of study period is based on the availability of data series. Descriptions of variables and data sources are presented in Table 3.

Table 3: Description of Variables

Acronyms	Construction of Variable	Data Source
LNNICS	Natural logarithm of nickel spot price on Multi Commodity Exchange (MCX)	MCX Website
NICSR	Returns on nickel spot price on Multi Commodity Exchange (MCX)	MCX Website
LNNICF	Natural logarithm of nickel future price on Multi Commodity Exchange (MCX)	MCX Website
NICFR	Returns on nickel future price on Multi Commodity Exchange (MCX)	MCX Website
LNZINS	Natural logarithm of zinc spot price on Multi Commodity Exchange (MCX)	MCX Website
ZINSR	Returns on zinc spot price on Multi Commodity Exchange (MCX)	MCX Website
LNZINF	Natural logarithm of zinc future price on Multi Commodity Exchange (MCX)	MCX Website
ZINFR	Returns on zinc future price on Multi Commodity Exchange (MCX)	MCX Website
LNPEPS	Natural logarithm of pepper spot price on National Commodity & Derivatives Exchange (NCDEX)	NCDEX Website
PEPSR	Returns on pepper spot price on National Commodity & Derivatives Exchange (NCDEX)	NCDEX Website
LNPEPF	Natural logarithm of pepper future price on National Commodity & Derivatives Exchange (NCDEX)	NCDEX Website
PEPFR	Returns on pepper future price on National Commodity & Derivatives Exchange (NCDEX)	NCDEX Website
LNSOYS	Natural logarithm of soybean spot price on National Commodity & Derivatives Exchange (NCDEX)	NCDEX Website
SOYSR	Returns on soybean spot price on National Commodity & Derivatives Exchange (NCDEX)	NCDEX Website
LNSOYF	Natural logarithm of soybean future price on National Commodity & Derivatives Exchange (NCDEX)	NCDEX Website
SOYFR	Returns on soybean future price on National Commodity & Derivatives Exchange (NCDEX)	NCDEX Website

The present study employs the time series data analysis technique to study the relationship between the spot price and future prices of nickel and zinc on MCX and pepper and soybean on NCDEX. In a time series analysis, the results might generate a spurious data if the data series are non-stationary. Thus, the data- series must obey the time- series properties i.e. the time- series data should be stationary, meaning that, the mean and variance should be constant

over time and the value of covariance between two time- periods depends only on the distance between the two time- period and not the actual time at which the covariance is computed. The most popular and widely used test for stationary is the unit root test. The presence of unit root indicates that the data series is non-stationary. The standard procedures of unit root test namely the Augmented Dickey Fuller (ADF) (1979) (1981) is performed to check the stationary nature of the series. Assuming that the series follows an AR (p) process the ADF test makes a parametric correction and controls for the higher order correlation by adding the lagged difference terms of the dependent variable to the right hand side of the regression equation. In the ADF test, null hypothesis is that data set being tested has unit root. This provides a robustness check for stationary data-series. The unit root tests also provide the order of integration of the time- series variables. In a multivariate context if the variable under consideration are found to be I (1) (i.e. they are non-stationary at level but stationary at first difference), but the linear combination of the integrated variables is I (0), then the variables are said to be co-integrated (Enders, 2004). The complete ADF model with deterministic terms such as intercepts and trends is shown in equation (1).

$$\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + \cdots + \delta_{p-1} \Delta y_{t-p+1} + \varepsilon_t, \quad (1)$$

Where α is a constant, β the coefficient on a time trend and p the lag order of the autoregressive process. Lag length for VAR system is selected based on minimum sequential modified LR test statistic. The vector autoregression (VAR) is commonly used for forecasting systems of interrelated time series and for analyzing the dynamic impact of random disturbances on the system of variables. The VAR approach sidesteps the need for structural modelling by treating every endogenous variable in the system as a function of the lagged values of all of the endogenous variables in the system. The mathematical representation of a VAR is:

$$y_t = A_1 y_{t-1} + \cdots + A_p y_{t-p} + B x_t + \epsilon_t \quad (2)$$

where Y_t is a k vector of endogenous variables, X_t is a d vector of exogenous variables, A_1, \dots, A_p and B are matrices of coefficients to be estimated, and ϵ_t is a vector of innovations that may be contemporaneously correlated but are uncorrelated with their own lagged values and uncorrelated with all of the right-hand side variables.

Lag Length Criteria computes various criteria to select the lag order of an unrestricted VAR (Lütkepohl, 1991). The sequential modified Likelihood Ratio (LR) test is carried out as follows. Starting from the maximum lag, test the hypothesis that the coefficients on lag l are jointly zero using the χ^2 statistics:

$$LR = (T - m) \{ \log | \Omega_{l-1} | - \log | \Omega_l | \} \sim \chi^2(k^2) \quad (3)$$

Where, m is the number of parameters per equation under the alternative, note that we employ Sims' (1980) small sample modification which uses $[T-m]$ rather than T . We compare the modified LR statistics to the 5% critical values starting from the maximum lag, and decreasing the lag one at a time until we first get a rejection.

With the non-stationary series, co-integration analysis has been used to examine whether any long term relationship exists. However, a necessary condition for the use of co-integration technique is that the variable under consideration must be integrated in the same order and the linear combinations of the integrated variables are free from unit root. According to Engel and Granger (1987), if the variables are found to be co-integrated, they would not drift apart over time and the long run combination amongst the non-stationary variables can be established. To conduct the co-integration test, the Engel and Granger (1987) or the Johansen and Juselius (1990) or the Johansen (1991) approach can be used. The Engel-Granger's two step approaches can only deal with one linear combination of variables that is stationary. In a multivariate practice, however, more than one stable linear combination may exist. The Johansen's co-integration method is regarded as full information maximum likelihood method that allows for testing co-integration in a whole system of equations.

The Johansen methods of co-integration can be written as the following vector autoregressive framework of order p .

$$X_t = A_0 + \sum_{j=1}^p B_j X_{t-j} + e_t \quad (4)$$

Where, X_t is an $n \times 1$ vector of non stationary $I(1)$ variables, A_0 is an $n \times 1$ vector of constants, p is the maximum lag length, B_j is an $n \times n$ matrix of coefficient and e_t is a $n \times 1$ vector of white noise terms. The number of characteristic roots can be tested by considering the following trace statistic and the maximum eigenvalue test.

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^p \ln(1 - \hat{\lambda}_i) \quad (5)$$

$$\lambda_{max}(r, r+1) = -T \ln(1 - \hat{\lambda}_{r+1}) \quad (6)$$

Where, r is the number of co-integrating vectors under the null hypothesis, T is the number of usable observations and $\hat{\lambda}_j$ is the estimated value for the j^{th} ordered characteristic roots or the eigenvalue from the Π matrix.

A significantly non-zero eigenvalue indicates a significant co-integrating vector. The trace statistics is a joint test where the null hypothesis is that the number of co-integration vectors is less than or equal to r against an unspecified general alternative that there are more than r . Whereas, the maximum eigenvalue statistics test the null hypothesis that the number of co-integrating vectors is less than or equal to r against the alternative of $r+1$ (Enders, 2004; Brooks, 2002)

A Vector Error Correction (VEC) model is a restricted VAR designed for use with non-stationary series that are known to be co-integrated. The VEC Model has co-integration relations built into the specification so that it restricts the behaviour of the endogenous variables to converge to their co-integrating relationships while allowing for short-run adjustment dynamics. The co-integration term is known as the error correction term since the deviation from long-run equilibrium is corrected gradually through a series of partial short-run adjustments.

$$\Delta y_{1,t} = \alpha_1(y_{2,t-1} - \beta y_{1,t-1}) + \epsilon_{1,t} \quad (7)$$

$$\Delta y_{2,t} = \alpha_2(y_{2,t-1} - \beta y_{1,t-1}) + \epsilon_{2,t} \quad (8)$$

In this model, the only right-hand side variable is the error correction term. In long run equilibrium, this term is zero. However, if y_1 and y_2 deviate from the long run equilibrium, the error correction term will be non-zero and each variable adjusts to partially restore the equilibrium relation. The coefficient α_i measures the speed of adjustment of the i -th endogenous variable towards the equilibrium.

Further to examine dynamic relationship between variables, bi-variate Granger Causality test (Engel & Granger, 1987) is applied. The bi-variate regressions of Granger Causality Test are:

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \dots + \alpha_l y_{t-l} + \beta_1 x_{t-1} + \dots + \beta_l x_{t-l} + \epsilon_t \quad (9)$$

$$x_t = \alpha_0 + \alpha_1 x_{t-1} + \dots + \alpha_l x_{t-l} + \beta_1 y_{t-1} + \dots + \beta_l y_{t-l} + u_t \quad (10)$$

For all possible pairs of (x, y) series in the group, the reported F -statistics are the Wald statistics for the joint hypothesis:

$$\beta_1 = \beta_2 = \dots = \beta_l = 0$$

For each equation, the null hypothesis is that x does not Granger-cause y in the first regression and y does not Granger-cause x in the second equation.

EMPIRICAL ANALYSIS

The descriptive statistics for all the variables under study are presented in Table 4 & 5. The value of skewness and kurtosis indicate the lack of symmetry in the distribution. Generally, if the value of skewness and kurtosis are 0 and 3 respectively, the observed distribution is said to be normally distributed. Furthermore, if the skewness coefficient is in excess of unity it is considered fairly extreme and the low (high) kurtosis value indicates extreme platykurtic (extreme leptokurtic). From the Tables 4 & 5, it is observed that the frequency distributions of underlying variables are not normal. The significant coefficient of Jarque-Bera statistics also indicates that the frequency distributions of considered series are not normal. The probability value of less than 0.05 of Jarque-Bera statistics indicates that the frequency distributions of considered series are not normally distributed except variables like LNZINS, ZINSR and LNZINF, which is the precondition for any market to be efficient in the weak form ((Fama E., 1965; Stevenson & Bear, 1970; Reddy, 1997).

Table 4: Descriptive Statistics of Nickel & Zinc

	LNNICS	NICSR	LNNICF	NICFR	LNZINS	ZINSR	LNZINF	ZINFR
<i>Mean</i>	6.859763	-0.059705	6.866768	-0.064818	4.633827	0.002686	4.640783	-0.001624
<i>Median</i>	6.847049	0.081946	6.855925	-0.078044	4.632785	0.050077	4.638923	-0.021577
<i>Maximum</i>	7.099945	5.204429	7.115212	4.925699	4.768988	3.927813	4.773660	3.630763
<i>Minimum</i>	6.708084	-6.768303	6.711979	-7.468998	4.465333	-4.641975	4.471133	-5.033097
<i>Std. Dev.</i>	0.070149	1.645662	0.069598	1.352065	0.051798	1.515758	0.050415	1.238862
<i>Skewness</i>	0.793717	-0.216790	0.853051	-0.283522	0.026154	-0.095377	0.059506	-0.294536
<i>Kurtosis</i>	3.848293	3.800933	4.041960	5.864662	3.189996	3.194864	3.279450	4.468115
<i>Jarque-Bera</i>	59.93164	15.34550	73.93452	157.76480	0.71844	1.37564	1.70673	46.29378
<i>Probability</i>	0.000000	0.000465	0.000000	0.000000	0.698220	0.502670	0.425978	0.000000
<i>Observations</i>	444	444	444	444	444	444	444	444
(Source: Author's Estimation)								

Table 5: Descriptive Statistics of Pepper & Soybean

	LNPEPS	PEPSR	LNPEPF	PEPFR	LNSOYS	SOYSR	LNSOYF	SOYFR
<i>Mean</i>	10.482200	0.094377	10.483640	0.093521	7.994379	0.168723	7.977497	0.404310
<i>Median</i>	10.521080	0.037876	10.484380	0.155240	8.049427	0.216702	8.006034	0.204499
<i>Maximum</i>	10.671950	7.087429	10.707280	8.170326	8.508758	47.707870	8.499131	80.381220
<i>Minimum</i>	10.108670	-6.090026	10.157120	-8.365681	7.631917	-30.008560	7.636511	-42.822970
<i>Std. Dev.</i>	0.141019	1.172780	0.138445	1.899408	0.234555	3.104854	0.216887	9.332122
<i>Skewness</i>	-0.676273	0.941544	-0.298150	-0.362234	0.291134	5.611586	0.304668	2.658743
<i>Kurtosis</i>	2.339071	11.836990	2.197182	6.352679	1.885138	146.811300	1.985706	31.830300
<i>Jarque-Bera</i>	41.92481	1510.3100	18.50168	217.65830	29.26613	384941.500	25.90156	15900.0500
<i>Probability</i>	0.000000	0.000000	0.000096	0.000000	0.000000	0.000000	0.000002	0.000000
<i>Observations</i>	444	444	444	444	444	444	444	444
(Source: Author's Estimation)								

To check the stationarity of the underlying data series, we follow the standard procedure of unit root testing by employing the Augmented Dickey Fuller (ADF) test. The results are presented in Table 6 & 7. On the basis of the ADF test, all the series are found to be non-stationary at level with intercept. However, after taking the first difference these series are found to be stationary at 1, 5 and 10 percent significance level. Thus the stationary test indicates that all series are individually integrated of the order I (1).

Table 6: Result of Augmented Dickey-Fuller Unit Root Test (Nickel & Zinc)

Variable	t-Statistic		Trend		Trend & Intercept		None	
			Prob.*	t-Statistic	Prob.*	t-Statistic	Prob.*	
D(LNNICS)	Augmented Dickey-Fuller test statistic		-23.0422	0.0000	-23.0160	0.0000	-23.0237	0.0000
	Test critical values:	1% level	-3.4449		-3.9790		-2.5702	
		5% level	-2.8679		-3.4200		-1.9415	
		10% level	-2.5702		-3.1327		-1.6162	
D(NICSR)	Augmented Dickey-Fuller test statistic		-13.9907	0.0000	-13.9743	0.0000	-14.0068	0.0000
	Test critical values:	1% level	-3.4452		-3.9793		-2.5703	
		5% level	-2.8680		-3.4202		-1.9416	
		10% level	-2.5703		-3.1328		-1.6162	
D(LNNICF)	Augmented Dickey-Fuller test statistic		-16.5980	0.0000	-16.5793	0.0000	-16.5804	0.0000
	Test critical values:	1% level	-3.4449		-3.9790		-2.5702	
		5% level	-2.8679		-3.4200		-1.9415	
		10% level	-2.5702		-3.1327		-1.6162	
D(NICFR)	Augmented Dickey-Fuller test statistic		-11.4642	0.0000	-11.4495	0.0000	-11.4761	0.0000
	Test critical values:	1% level	-3.4453		-3.9794		-2.5703	
		5% level	-2.8680		-3.4203		-1.9416	
		10% level	-2.5703		-3.1328		-1.6162	
D(LNZINS)	Augmented Dickey-Fuller test statistic		-23.3402	0.0000	-23.3133	0.0000	-23.3649	0.0000
	Test critical values:	1% level	-3.4449		-3.9790		-2.5702	
		5% level	-2.8679		-3.4200		-1.9415	
		10% level	-2.5702		-3.1327		-1.6162	
D(ZINSR)	Augmented Dickey-Fuller test statistic		-12.6497	0.0000	-12.6363	0.0000	-12.6634	0.0000
	Test critical values:	1% level	-3.4452		-3.9793		-2.5703	
		5% level	-2.8680		-3.4202		-1.9416	
		10% level	-2.5703		-3.1328		-1.6162	
D(LNZINF)	Augmented Dickey-Fuller test statistic		-18.3276	0.0000	-18.3067	0.0000	-18.3460	0.0000
	Test critical values:	1% level	-3.4449		-3.9790		-2.5702	
		5% level	-2.8679		-3.4200		-1.9415	
		10% level	-2.5702		-3.1327		-1.6162	

D(ZINFR)	Augmented Dickey-Fuller test statistic		-12.2321	0.0000	-12.2207	0.0000	-12.2454	0.0000
	Test critical values:	1% level	-3.4452		-3.9793		-2.5703	
		5% level	-2.8680		-3.4202		-1.9416	
		10% level	-2.5703		-3.1328		-1.6162	
*MacKinnon (1996) one-sided p-values.								
(Source: Author’s Estimation)								

Table 7: Result of Augmented Dickey-Fuller Unit Root Test (Pepper & Soybean)

Variable	t-Statistic		Trend		Trend & Intercept		None	
			Prob.*	t-Statistic	Prob.*	t-Statistic	Prob.*	
D(LNPEPS)	Augmented Dickey-Fuller test statistic		-17.0980	0.0000	-17.3080	0.0000	-17.0428	0.0000
	Test critical values:	1% level	-3.4449		-3.9790		-2.5702	
		5% level	-2.8679		-3.4200		-1.9415	
		10% level	-2.5702		-3.1327		-1.6162	
D(PEPSR)	Augmented Dickey-Fuller test statistic		-15.1497	0.0000	-15.1310	0.0000	-15.1668	0.0000
	Test critical values:	1% level	-3.4451		-3.9792		-2.5703	
		5% level	-2.8679		-3.4201		-1.9416	
		10% level	-2.5702		-3.1327		-1.6162	
D(LNPEPF)	Augmented Dickey-Fuller test statistic		-19.6370	0.0000	-19.6940	0.0000	-19.6347	0.0000
	Test critical values:	1% level	-3.4449		-3.9790		-2.5702	
		5% level	-2.8679		-3.4200		-1.9415	
		10% level	-2.5702		-3.1327		-1.6162	
D(PEPFR)	Augmented Dickey-Fuller test statistic		-15.9824	0.0000	-15.9628	0.0000	-16.0015	0.0000
	Test critical values:	1% level	-3.4451		-3.9792		-2.5703	
		5% level	-2.8679		-3.4201		-1.9416	
		10% level	-2.5702		-3.1327		-1.6162	
D(LNSOYS)	Augmented Dickey-Fuller test statistic		-27.8673	0.0000	-27.8404	0.0000	-27.8345	0.0000
	Test critical values:	1% level	-3.4449		-3.9790		-2.5702	
		5% level	-2.8679		-3.4200		-1.9415	
		10% level	-2.5702		-3.1327		-1.6162	

D(SOYSR)	Augmented Dickey-Fuller test statistic		-12.8002	0.0000	-12.7852	0.0000	-12.8154	0.0000
	Test critical values:	1% level	-3.4452		-3.9793		-2.5703	
		5% level	-2.8680		-3.4202		-1.9416	
		10% level	-2.5703		-3.1328		-1.6162	
D(LNSOYF)	Augmented Dickey-Fuller test statistic		-16.7216	0.0000	-16.6940	0.0000	-16.7304	0.0000
	Test critical values:	1% level	-3.4450		-3.9791		-2.5702	
		5% level	-2.8679		-3.4201		-1.9415	
		10% level	-2.5702		-3.1327		-1.6162	
D(SOYFR)	Augmented Dickey-Fuller test statistic		-14.8606	0.0000	-14.8466	0.0000	-14.8780	0.0000
	Test critical values:	1% level	-3.4452		-3.9793		-2.5703	
		5% level	-2.8680		-3.4202		-1.9416	
		10% level	-2.5703		-3.1328		-1.6162	
*MacKinnon (1996) one-sided p-values.								
(Source: Author's Estimation)								

The presence and the number of co-integrating relationships among the underlying variables are tested through the Johansen procedure i.e., Johansen and Juselius (1990) and Johansen (1991). Specifically, trace statistic and the maximum eigenvalue are used to test for the number of co-integrating vectors. The result of VAR leg order selection criteria are presented in the Table 8,9,10 and 11. Leg order selected for nickel and zinc are based on FPE and AIC criterion. And Leg order for pepper and soybean are based on SC and HQ criterion. The results of both trace statistics and the maximum eigenvalue test statistics are presented in Table 12, 13, 14 & 15. The trace statistics for nickel, zinc and pepper indicate two co-integrating equations each. For soybean, one is co-integrating equation. While the maximum eigenvalue statistics for nickel, zinc and pepper also identify two co-integrating equations each. For soybean, it is one co-integrating equation. The results show that long-run equilibrium relationship exists between the spot and future price of nickel and zinc on MCX and pepper and soybean on NCDEX.

Table 8: VAR Lag Order Selection Criteria of Nickel

Lag	LogL	LR	FPE	AIC	SC	HQ
0	956.3921	NA	1.49E-07	-4.368771	-4.331361	-4.354007
1	5213.732	8417.035	5.29E-16	-23.82446	-23.63741*	-23.75064*
2	5236.783	45.14926	5.12e-16*	-23.85680*	-23.52011	-23.72393
3	5242.766	11.61021	5.36E-16	-23.81085	-23.32453	-23.61893
4	5256.331	26.07137	5.42E-16	-23.79968	-23.16372	-23.5487
5	5273.318	32.33776	5.40E-16	-23.80421	-23.01861	-23.49417
6	5285.908	23.73654	5.48E-16	-23.78857	-22.85333	-23.41948
7	5298.258	23.05646	5.58E-16	-23.77182	-22.68695	-23.34368
8	5314.221	29.51078*	5.58E-16	-23.77166	-22.53714	-23.28446

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

(Source: Author's Estimation)

Table 9: VAR Lag Order Selection Criteria of Zinc

Lag	LogL	LR	FPE	AIC	SC	HQ
0	1133.341	NA	6.61E-08	-5.180465	-5.143055	-5.165701
1	5505.362	8643.766	1.39E-16	-25.16221	-24.97516*	-25.08839*
2	5526.369	41.14696	1.36e-16*	25.18518*	-24.84849	-25.05231
3	5534.447	15.67342	1.41E-16	-25.14884	-24.66251	-24.95691
4	5545.997	22.20067	1.44E-16	-25.12843	-24.49247	-24.87745
5	5553.438	14.16396	1.49E-16	-25.08916	-24.30356	-24.77913
6	5560.702	13.69581	1.55E-16	-25.04909	-24.11385	-24.68
7	5574.8	26.31932*	1.57E-16	-25.04036	-23.95549	-24.61222
8	5585.988	20.68394	1.60E-16	-25.0183	-23.78378	-24.5311

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

(Source: Author's Estimation)

Table 10: VAR Lag Order Selection Criteria of Pepper

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-435.1206	NA	8.81E-05	2.014315	2.051724	2.029078
1	4526.867	9810.168	1.23E-14	-20.6737	-20.48665*	-20.59988*
2	4547.109	39.64819	1.21e-14*	-20.69316*	-20.35647	-20.56029
3	4559.191	23.44377	1.23E-14	-20.67519	-20.18886	-20.48326
4	4574.381	29.19505	1.24E-14	-20.67147	-20.03551	-20.42049
5	4593.046	35.53223	1.22E-14	-20.6837	-19.8981	-20.37366
6	4605.664	23.78917	1.24E-14	-20.66818	-19.73294	-20.29909
7	4619.328	25.50969	1.26E-14	-20.65747	-19.57259	-20.22932
8	4637.8	34.14903*	1.24E-14	-20.66881	-19.43429	-20.18161
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						
(Source: Author's Estimation)						

Table 11: VAR Lag Order Selection Criteria of Soybean

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2126.437	NA	2.06E-01	9.772648	9.810058	9.787412
1	405.838	5006.471	2.00E-06	-1.769899	-1.582851	-1.696081
2	566.697	315.0771	1.03E-06	-2.43439	-2.097704	-2.301518
3	623.0979	109.4384	8.56E-07	-2.619715	-2.133391*	-2.427788*
4	633.2682	19.54743	8.79E-07	-2.592973	-1.957011	-2.341992
5	652.6775	36.94891	8.66E-07	-2.608612	-1.823011	-2.298576
6	668.0149	28.91599	8.68E-07	-2.605573	-1.670334	-2.236483
7	688.7361	38.68595*	8.50e-07*	-2.627230*	-1.542353	-2.199085
8	701.2336	23.10323	8.64E-07	-2.611163	-1.376648	-2.123964
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						
(Source: Author's Estimation)						

Table 12: Result of Johansen's Co-integration Test of Nickel

Hypothesized No. of CE(s)	Eigen-value e	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.177413	92.87492	15.49471	0.0000	86.12797	14.2646	0.0000
At most 1 *	0.015183	6.746952	3.841466	0.0094	6.746952	3.841466	0.0094
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level							
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level							
* denotes rejection of the hypothesis at the 0.05 level							
**MacKinnon-Haug-Michelis (1999) p-values							
(Source: Author's Estimation)							

Table 13: Result of Johansen's Co-integration Test of Zinc

Hypothesized No. of CE(s)	Eigen-value e	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.179895	96.11325	15.49471	0.0000	87.4605	14.2646	0.0000
At most 1 *	0.01943	8.652754	3.841466	0.0033	8.652754	3.841466	0.0033
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level							
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level							
* denotes rejection of the hypothesis at the 0.05 level							
**MacKinnon-Haug-Michelis (1999) p-values							
(Source: Author's Estimation)							

Table 14: Result of Johansen's Co-integration Test of Pepper

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.037114	22.75789	15.49471	0.0034	16.71661	14.2646	0.0201
At most 1 *	0.013575	6.04128	3.841466	0.0140	6.04128	3.841466	0.0140
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level							
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level							
* denotes rejection of the hypothesis at the 0.05 level							
**MacKinnon-Haug-Michelis (1999) p-values							
(Source: Author's Estimation)							

Table 15: Result of Johansen's Co-integration Test of Soybean

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05Critical Value	Prob.**
None *	0.084367	39.4508	15.49471	0.0000	38.78165	14.2646	0.0000
At most 1	0.00152	0.669144	3.841466	0.4133	0.669144	3.841466	0.4133
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level							
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level							
* denotes rejection of the hypothesis at the 0.05 level							
**MacKinnon-Haug-Michelis (1999) p-values							
(Source: Author's Estimation)							

Assuming one co-integrating vector, the short run and long run interaction of the underlying variables the VECM has been estimated based on the Johansen co-integration methodology. The results are presented in Table 16, 17, 18 & 19. The results show that a long-run equilibrium relationship exists between the spot return and future return of nickel and zinc on MCX and pepper and soybean on NCDEX. The estimated co-integrating coefficients for the nickel, zinc, pepper and soybean spot return and future return are based on the first normalized eigenvector are as follows. These values represent long term elasticity measures. Thus the co-integration relationship can be re-expressed as:

$$\begin{aligned} \text{NICS R} &= -0.005963 + (-0.984985) * \text{NICFR} \\ \text{ZINS R} &= -0.006937 + (-1.003046) * \text{ZINFR} \\ \text{PEPS R} &= -0.010750 + (-0.915559) * \text{PEPFR} \\ \text{SOYS R} &= 0.175310 + (-0.915559) * \text{SOYFR} \end{aligned}$$

Table 16: Results of Vector Error Correction Model of Nickel

Panel A: Normalized Co-integration Coefficients		
NICS R(-1)	NICFR(-1)	Constant
1.000000	-0.984985	-0.005963
	(-0.01726)	
	[-57.0636]	
Panel B: Coefficient of Error Correction term		
Error Correction:	D(NICS R)	D(NICFR)
CointEq1	-2.247653	0.063356
	(-0.28671)	(-0.25798)
	[-7.83941]	[0.24559]
F-statistic	96.19647	21.03130
Standard errors in () & t-statistics in []		
(Source: Author's Estimation)		

Table 17: Results of Vector Error Correction Model of Zinc

Panel A: Normalized Co-integration Coefficients		
ZINSR(-1)	ZINFR(-1)	Constant
1.000000	-1.003046	-0.006937
	(-0.019850)	
	[-50.5291]	
Panel B: Coefficient of Error Correction term		
Error Correction:	D(ZINSR)	D(ZINFR)
CointEq1	-1.964150	0.208297
	(-0.26638)	(-0.23538)
	[-7.37354]	[0.88493]
F-statistic	95.92745	35.95388
Standard errors in () & t-statistics in []		
(Source: Author's Estimation)		

Table 18: Results of Vector Error Correction Model of Pepper

Panel A: Normalized Co-integration Coefficients		
PEPSR(-1)	PEPFR(-1)	Constant
1.000000	-0.915559	-0.010750
	(-0.03116)	
	[-29.3853]	
Panel B: Coefficient of Error Correction term		
Error Correction:	D(PEPSR)	D(PEPFR)
CointEq1	-0.172583	1.361488
	(-0.07485)	(-0.1219)
	[-2.30578]	[11.1688]
F-statistic	51.46708	82.62256
Standard errors in () & t-statistics in []		
(Source: Author's Estimation)		

Table 19: Results of Vector Error Correction Model of Soybean

Panel A: Normalized Co-integration Coefficients		
SOYSR(-1)	SOYFR(-1)	Constant
1.000000	-0.698292	0.175310
	(-0.04496)	
	[-15.5326]	
Panel B: Coefficient of Error Correction term		
Error Correction:	D(SOYSR)	D(SOYFR)
CointEq1	-0.427181	2.764767
	(-0.08491)	(-0.22087)
	[-5.03083]	[12.5178]
F-statistic	76.95397	133.05930
Standard errors in () & t-statistics in []		
(Source: Author's Estimation)		

The t-statistics are given in [] brackets while the error term are given in () brackets. The coefficients of nickel, zinc and pepper future returns are negative and statistically significant in Table 16, 17 and 18 respectively, while the coefficient of soybean is positive and statistically insignificant in Table 19. Results reveals that the relationship between nickel, zinc, pepper and soybean future returns and spot returns are positive. The sign of the error correction coefficient in determination of nickel, zinc, pepper and soybean spot returns is negative: (-0.01726), (-0.019850), (-0.03116) and (-0.04496), respectively. The corresponding t-value is -57.0636, -50.5291, -29.3853 and -15.5326 for nickel, zinc, pepper and soybean, respectively. This indicates that nickel, zinc, pepper and soybean spot returns do respond significantly to re-establish the equilibrium relationship once deviation occurs.

The co-integration results indicate that causality exists between the co-integrated variables but it fails to show us the direction of the causal relationship. The pair-wise Granger causality test (1987) is performed between all possible pairs of variables to determine the direction of causality. The rejected hypotheses are reported in Table 20, 21, 22 & 23. The results show that bi-directional causality does exist between spot returns and future returns of nickel. While zinc and pepper future returns Granger causes spot returns but not the other way round. Soybean spot returns Granger causes future returns in short run.

Table 20: Result of Granger Causality Test of Nickel

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision
NICFR does not Granger Cause NICSER	442	50.8036	1.00E-20	Reject
NICSER does not Granger Cause NICFR		5.49802	0.0044	Reject
<i>(Source: Author's Estimation)</i>				

Table 21: Result of Granger Causality Test of Zinc

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision
ZINFR does not Granger Cause ZINSR	442	29.449	1.00E-12	Reject
ZINSR does not Granger Cause ZINFR		2.85153	5.88E-02	Accept
<i>(Source: Author's Estimation)</i>				

Table 22: Result of Granger Causality Test of Pepper

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision
PEPFR does not Granger Cause PEPSR	443	47.3854	2.00E-11	Reject
PEPSR does not Granger Cause PEPFR		0.7063	0.4011	Accept
<i>(Source: Author's Estimation)</i>				

Table 23: Result of Granger Causality Test of Soybean

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision
SOYFR does not Granger Cause SOYSR	441	1.63007	1.82E-01	Accept
SOYSR does not Granger Cause SOYFR		3.45937	1.64E-02	Reject
<i>(Source: Author's Estimation)</i>				

CONCLUSION

The aim of this paper was to investigate the lead-leg relationships between non- precious metals – nickel and zinc on Multi Commodity Exchange (MCX) and agricultural commodities - pepper and soybean on National Commodities & Derivatives Exchange (NCDEX) using Johansen's co-integration test, VECM and Granger causality test. The analysis used daily data on spot prices and near month futures prices of four selected commodities over the period from April 2011 to April 2013 which is obtained from MCX and NCDEX website.

To conclude, the Augmented Dickey Fuller test suggests that all the series are found to be non-stationary at level with intercept. However, after taking the first difference, these series

are found to be stationary at 1, 5 and 10 percent level of significance. The Johansen's co-integration test suggests that in case of all the four commodities under the study, results are almost same. Series of spot and futures prices are found to be co-integrated of order one, indicating that there is a stable long-run equilibrium relationship in these series. The results of VECM suggest that there is bi-directional causality in case of all the four commodities in long run suggesting that both the markets are efficient in discounting the new information. Though there exists feedback relationship between spot and futures markets, futures market has been found to be more information efficient than the underlying spot market, i.e. more information flows from the futures market to spot market. The results of Granger causality suggest that bidirectional causality does exist between spot returns and future returns of nickel in the short run. While zinc and pepper future returns Granger causes spot returns but not the other way round. Soybean spot returns Granger causes future returns in the short run. At present, Indian commodity futures markets are in its incipient stage. More studies are required for the better implications of the results and strong evidences are required in favor of the results. The main implications of the results of the present study are for investors and policy makers. On the basis of the results, investors may decide about the market, futures or spot, in which they should invest and the policy makers may frame policies on the basis of market efficiency of these markets.

However, the limitations of the study should not be overlooked. The present study is limited to only four commodities. The same study can be extended for other commodities with a longer time period. A logical extension of the study can be done by including more commodities and finding the efficiency of Indian commodities market.

ENDNOTES

1. www.fmc.gov.in accessed on April 24, 2015
2. www.mcxindia.com accessed on April 24, 2015
3. www.ncdex.com accessed on May 4, 2015
4. www.mcxindia.com accessed on April 24, 2015
5. www.ncdex.com accessed on May 4, 2015
6. www.ncdex.com accessed on May 4, 2015
7. www.ncdex.com accessed on May 4, 2015

REFERENCES

1. Bhatia, S. (2007). *Do the S&P CNX Nifty Index and Nifty Futures Really lead/lag? Error Correction Model: a Co-integration Approach*. Retrieved on April 23, 2015, from [www.nseindia.com: www.nseindia.com/content/research/comppaper183.pdf](http://www.nseindia.com/content/research/comppaper183.pdf)
2. Brooks, C. (2002). *Introductory Econometrics for Finance* (2nd ed.). Cambridge: Cambridge University Press.

3. Chaihetphon, P., & Pavabutr, P. (2010). Price Discovery in Indian Gold Futures Market. *J Econ Financ* , **34** (4): 455–467.
4. Chan, K. (1992). A Further Analysis of the Lead–lag Relationship between the Cash Market and Stock Index Futures Market. *Rev Financ Stud* , **5** (1): 123–152.
5. Chan, K. (1992). A Further Analysis of the Lead–lag Relationship between the Cash Market and Stock Index Futures Market. *Rev Financ Stud* , **5** (1): 123–152.
6. Dickey, D. A., & Fuller, W. A. (1979). Distribution of the Estimators for Autoregressive Time Series with a Unit Root. *Journal of American Statistical Association* , **74** (366): 427–431.
7. Dickey, D. A., & Fuller, W. A. (1981). Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. *Econometrica: Journal of the Econometric Society* , **49** (4): 1057–1072.
8. Enders, W. (2004). *Applied Econometric Time Series* (2nd ed.). Wiley Series in Probability and Statistics.
9. Engel, R. F., & Granger, W. J. (1987). Co-Integration and Error Correction: Representation, Estimation, and Testing. *Econometrica* , **55** (2): 251–276.
10. Fama, E. (1965). The Behaviour of Stock Market Prices. *Journal of Business* , **38** (1): 34–105.
11. Figuerola-Ferretti, I., & Gonzalo, J. (2006). *Price Discovery in Commodity Markets: The Case of Metals*. Retrieved April 24, 2015, from [www.ssrn.com](http://www.ssrn.com/abstract=891030): <http://www.ssrn.com/abstract=891030>
12. Gupta, K., & Singh, B. (2007). *An Examination of Price Discovery and Hedging Efficiency of Indian Equity Futures Market In: 10th Indian Institute of Capital Markets Conference Paper*. Retrieved April 24, 2015, from [www.ssrn.com](http://www.ssrn.com/abstract=962002): <http://www.ssrn.com/abstract=962002>
13. Gupta, K., & Singh, B. (2009). *Price Discovery and Arbitrage Efficiency of Indian Equity Futures and Cash Markets*. Retrieved April 24, 2015, from [www.nseindia.com](http://www.nseindia.com/content/research/res_paper_final185.pdf): www.nseindia.com/content/research/res_paper_final185.pdf
14. Johansen, S. (1991). Estimation and Hypothesis testing of Cointegration Vector in Gaussian Vector Autoregressive Models. *Econometrica* , **59**, 1551–1581.
15. Johansen, S., & Juselius, K. (1990). Maximum Likelihood Estimation and inference on Cointegration with application to the Demand for Money. *Oxford Bulletin of Economics and Statistics* , **52** (2): 169–210.
16. Karande, K. (2006). *A study of Castor Seed Futures Market in India*. Retrieved April 24, 2015, from [www.ssrn.com](http://www.ssrn.com/abstract=983342): <http://www.ssrn.com/abstract=983342>
17. Karmakar, M. (2009). Price Discoveries and Volatility Spillovers in the S&P CNX Nifty Future and Its Underlying Index CNX NIFTy. *Vikalpa* , **34** (2), 41–56.
18. Koontz, S. R., Garcia, P., & Hudson, M. A. (1990). Dominant-satellite Relationships between Live Cattle cash and Futures Markets. *J Futures Mark* , **10** (2): 123–136.

19. Kumar, N., & Arora, S. (2011). Price Discovery in Precious Metals Market: A Study of Gold. *Int J Financ Manag* , **1** (1): 49–58.
20. Lütkepohl, H. (1991). *Introduction to Multiple Time Series Analysis*. New York: Springer-Verlag.
21. Nirmala, K.(2014). *Price Discovery in the International Commodity Futures Market:A Study with reference to Zinc futures in Multi Commodity Exchange and London Metal Exchange*. Available at www.icaindia.info/images/news/Price_discovery.docx
22. Oellermann, M. C., & Farris, P. L. (1985). Futures or Cash: Which Market Leads Live Beef Cattle Prices? *J Futures Mark* , **5** (4): 529–538.
23. Oellermann, M. C., Brorsen, W. B., & Farris, P. L. (1989). Price Discovery for Feeder Cattle. *J Futures Mark* , **9** (2): 113-121.
24. Quan, J. (1992). Two-step Testing Procedure for Price Discovery Role of Futures Prices. *J Futures Mark* , **12** (2): 139–149.
25. Raju, M. T., & Karande, K. (2003). *Price Discovery and Volatility on NSE Futures Market*. Retrieved April 24, 2015 from www.sebi.gov.in . Also see, Working Paper Series No. 7: http://www.sebi.gov.in/cms/sebi_data/attachdocs/1293096997650.pdf
26. Reddy, S. Y. (1997). Efficiency of Indian Stock Markets: An Empirical Analysis of Weak-Form EMH of the BSE. *UTI Indian Capital Market Conference*, pp. 91-115.
27. Schreiber, P. S., & Schwartz, R. A. (1986). Price Discovery in Securities Markets. *Journal of Portfolio Management* , **12**, 43-48.
28. Sims, C. (1980). Macroeconomics and Reality. *Econometrica* (**48**), 1-48.
29. Stevenson, A. R., & Bear, M. R. (1970). Commodity Futures: Trends or Random Walks? *The Journal of Finance* , **25** (1): 65-81.
30. Wahab, M., & Lashgari, M. (1993). Price dynamics and error correction in stock index and stock index futures markets: a cointegration approach. *J Futures Mark* , **13** (7): 711–742.

EMPLOYEES ATTITUDE TOWARDS HUMAN RESOURCE DEVELOPMENT POLICIES- A CASE STUDY OF HPTDC

*Dr. Yoginder Singh**

ABSTRACT

The purpose of this paper is to analyse the overall attitude of employees working in Himachal Pradesh Tourism Development Corporation Limited (HPTDC) towards Human Resource Development policies of the corporation. The study involve some key question to gauge satisfaction level of class I, II, III and IV employees towards existing policies.

Keywords: Himachal Pradesh Tourism Development Corporation Limited (HPTDC), Human Resource Development (HRD), Life Insurance Corporation (LIC), Managing Director (MD), political interference in recruitment, Simple Random Sampling (SRS), training.

INTRODUCTION

Personnel policies provide guidelines for achieving the goals of personnel management and also expedite the process of Human Resource Development. Personnel policies comprise of the body of principles and rules of conduct which govern an enterprise in its relationships with its employees. The success of the personnel department will be evident in the process of interpreting personnel policies for the various departments of the organization so as to help in implementing them in a fair manner. Sound and effective personnel policies play a significant role in the development of human resources. Human Resource Development as a concept is responsible for developing various systems which deal with people, their problems, organizational dynamics etc. It has various sub-systems and each one to work together as it involves an integrated approach. A brief summary of these sub-systems is delineated below:

1. Evaluation of HRD Policies and Practices of HPTDC Ltd.

This paper presents an analysis of collected primary data. The extent and evaluation of HRD policies and practices of HPTDC, with regard to certain selected variables have been

*Dr. Yoginder Singh is Assistant Professor at the PG Department of Commerce, Dr.S.R.K.Govt. Arts College, Pondicherry University, Yanam-533464, India. E-mail:ys.pondyedu@gmail.com

studied; the difference between the laid down policies and their actual implementation will be evident from the analysis. Finally, the perceptions of employees towards the attitude of management regarding various HRD policies and practices of HPTDC have been studied.

2. Himachal Pradesh Tourism Development Corporation Limited (HPTDC)

The Himachal Pradesh Tourism Development Corporation Limited was incorporated on 1st September, 1972 under the Companies Act, 1956 with an authorized capital of Rs.2.00 crores. Over the years, the authorized capital has increased from time to time. The main objectives of the Corporation are to promote tourism in the state of Himachal Pradesh and for achieving this, the aim is to create and provide facilities for the tourists visiting the State. For fulfillment of these objectives, the Corporation has set up a number of Hotels, Tourist Bungalows, Tourist Lodges and Cafeterias throughout the State of Himachal Pradesh. HPTDC's new strategy to develop infrastructure includes the consolidation and strengthening of existing tourist's complexes, development of wayside facilities on National & important State Highways and promotion and development of adventure activities.

3. HRD and Himachal Pradesh Tourism Development Corporation Ltd.

The HRD wing of HPTDC is directly controlled by its Chief –cum - Managing Director. He is assisted by his personal secretary and Assistant General Manager (Personnel and Administration) in the day- to- day functioning of this wing at Head Office level. In the field units or offices, personnel function is performed by the officer-in-charge of the respective unit, elucidated as under. Although Finance and Accounts Division is under the direct control of the M.D., being a part of the Head Office, yet the personnel of this division are under the control of the Finance Manager. The HRD policies of the corporation have undergone a considerable change ever since its inception in 1972. Some of the policies are enumerated below:

3.1 Recruitment: All vacancies in the corporation are advertised and also notified to the employment exchange which is the responsibility of the department. The selection of candidates is done by a selection committee which is constituted by the Managing Director. For the purpose of selection, the candidates are given a test/interview or both. The selection committee is competent to lay down its own procedure for subjecting candidates to trade test and interview to judge their suitability.

3.2 Promotion: Broadly speaking, for all categories of posts in HPTDC, the promotion is on merit, efficiency, past performance and seniority. The MD has the power to lay down suitable criteria to determine merit and efficiency by means of a written/oral test, performance appraisal, interview etc. All the eligible candidates are assessed/ interviewed by a departmental promotion committee which is constituted by the M.D.

3.3 Seniority: Seniority between personnel selected as a result of same interview/ assessment is done in accordance with the order of preference drawn up by the selection committee. In case, there is no order of preference, date of appointment in the grade will determine seniority. A person who has been suspended from service, if subsequently found

suitable and promoted, will not take seniority in higher post/cadre over the junior official who had superseded him.

3.4 Procedure Followed For Making Promotion: Whenever there is a vacancy to be filled by promotion, the competent authority takes into account the service records and confidential character rolls of all personnel eligible for appointment. All promotions as a rule are considered by the Departmental Promotion Committee which submits its recommendations to the competent authority. The Departmental Promotion Committee is free to devise its own procedures for assessment of candidates. However, the committee is largely guided by confidential character rolls, supervisor's knowledge about the employee's capabilities, written reports of immediate supervisors, employee's intelligence, capacity to learn, aptitude and behavior with superiors, colleagues and juniors. The competent authority pays due regard to recommendations of departmental promotion committee. However, it must be understood that the committee is purely an advisory body and the responsibility for granting promotions or making appointments rests solely with the competent authority. All orders of appointment (whether by promotion or by direct recruitment) are issued only by the Head of Department with copies to the accounts and the department concerned.

3.5 Grievance Mechanism: Any employee who is aggrieved by an order on grounds that he has been superseded may appeal through his departmental head to the MD. In case, the appeal is wrongly addressed to a higher authority, the departmental head corrects the order. Such appeals are confidential and routed through the HRD department where the department's comments are entered. The decision taken by the MD is communicated to the concerned employee through the HRD department. In case, the aggrieved employee is still not satisfied with the decision of the MD, he has the right to appeal before the Board of Directors.

3.6 Miscellaneous: The power to interrupt the rules in respect of policies mentioned above, is vested in the MD and is deemed final. The power to amend the aforementioned rules and make additions thereto or deletions therefrom is vested in the Board of Directors of the Company. The amendments/additions/ alterations, so made by the Board of Directors shall have the same effect as if these were contained/ incorporated in the original rules.

3.7 Training: Training is considered important in the working of HPTDC. Employees of HPTDC are given on-the-job training in its own hotels and hotels of ITDC. Employees are also sent for training to various other institutions of hotel management and catering in India and abroad.

4. Methodology:

In order to evaluate HRD Policies and Practices and to examine employees perception towards the attitude of management regarding these policies, a sample of 50 employees working in HPTDC have been selected with the help of Simple Random Sampling (SRS) method. To collect the data, a questionnaire was prepared and administered to the employees. While

selecting the sample, special care has been taken that regional variation are duly represented. Further in order to drive the conclusions from the data, statistical tools like averages, chi square, bar diagrams, staple scales and graphs have been used.

5. Analysis and Interpretation:

To accomplish the objectives of the study, primary data have been analyzed in the following section:

5.1 Recruitment and Selected Variables:

Here an attempt has been made to record and analyze the views of employees with regard to recruitment on the basis of certain selected variables.

5.1.1. Age-wise Employee Satisfaction with Recruitment:

The respondents have been grouped in three categories (age-wise) and their views have been recorded in Table 5.1. The employees who were satisfied have been marked in the 'yes' row and those who were dissatisfied in the 'no' row.

Table 5.1: Employee Satisfaction with Recruitment

Nature of Response	Number of Respondents (Age-wise)			Total
	20-30 years	31-40 years	>40 years	
Yes	6(43)	8(33)	5(42)	19(38)
No	8(57)	16(67)	7(58)	31(62)
Total	14(100)	24(100)	12(100)	50(100)

$$\chi^2=0.069, p > .001$$

(Note: Figures in parentheses indicate the percentages of column total.)

Since χ^2 value is less than the calculated value at one per cent level of significance, the null hypothesis is accepted with the inferences that there is no significant difference in the opinion of respondents of different age groups regarding the satisfaction with recruitment. While 62 per cent of the total respondents voiced their dissatisfaction with the existing recruitment policy, only 38 per cent said that they were satisfied. Further, out of the satisfied lot, the level of satisfaction has been presented in Table 5.2.

5.1.2. Employee Satisfaction with Recruitment Procedure.

Table 5.2 indicates that even though 38 per cent of the respondents were satisfied, the level of satisfaction was low. While only 16 per cent of the respondents were satisfied to a great extent, 52 per cent were satisfied to a moderate extent and 32 per cent were satisfied to some extent only. Thus, it can be safely assumed that the overall satisfaction level of employees with the existing recruitment policy of HPTDC is rather low.

Table 5.2: Satisfaction with Recruitment

Nature of Response	Number of Respondents	Percentage
To Great Extent	3	16
To Moderate Extent	10	52
To Some Extent	6	32
Total	19	100

5.1.3 Employee Satisfaction with Recruitment (Sex-wise)

Table 5.3 indicates that 33.3 per cent of male and 62.5 per cent of female respondents were found satisfied with the recruitment policy whereas 66.6 per cent of male and 37.5 per cent of female respondents revealed dissatisfaction over the existing recruitment policy. The value of chi- Square (2.59) is less than the Table value at 5 per cent level of significance. This leads to the conclusion that there is no significant difference in the opinion of respondents both male and female over the existing recruitment policy.

Table 5.3: Sex and Employee satisfaction with regard to recruitment

Satisfaction	Male	Female	Total
Yes	14(33.3)	5(62.5)	19(38)
No	28(66.6)	3(37.5)	31(62)
Total	42(100)	8(100)	50(100)

$$\chi^2=2.59, P > .050$$

(Note: Figures in parentheses indicate the percentages of column total)

5.1.4. Education Level-wise Employees Satisfaction with Recruitment:

It is evident from Table 5.4 that 35.71 per cent of the matriculate respondents, 38.46 per cent of the graduate and 44.4 per cent of the Post-graduate and above, were satisfied with the existing recruitment policy whereas 64.2 per cent of matriculates, 61.5 per cent of graduates and 55.5 per cent of post- graduates and above were found dissatisfied with the recruitment policy in the corporation. The calculated value of χ^2 is less than the Table value at 1 per cent level of significance which leads to the conclusion that there is an insignificant difference in the opinion of respondents of different education levels.

Table 5.4: Qualification and Employee Satisfaction with recruitment

Nature of Response	Number of Respondents (Educational Level)			Total
	Matric	Graduate	Post-Graduate and above	
Yes	10(35.71)	5(38.46)	4(44.4)	19(38)
No	18(64.2)	8(61.5)	5(55.5)	31(62)
Total	28(100)	13(100)	9(100)	50(100)

$\chi^2=.05$, $P>.001$

(Note: Figures in parentheses. Indicate the percentages of column total)

5.1.5 Political Interference in Recruitment-Employees Perceptions (Qualification-wise):

Here an attempt has been made to gauge the feelings of employees as to what they think about the political interference leading to recruitment of candidates on extraneous considerations.

Table 5.5: Political interference in Recruitment- Perception of Employees

Nature of Response	Number of Respondents (Educational Level)			
	Matric	Graduate	Post-Graduate and above	Total
Yes	15(54)	9(69)	8(89)	32(64)
No	-	1(8)	-	1(2)
Can't Say	13(46)	3(23)	1(11)	17(34)
Total	28(100)	13(100)	9(100)	50(100)

(Note: Figures in parentheses indicate the percentages of column total.)

The above Table 5.5 indicates that a majority of respondents (64 per cent) feel that there is political interference in recruitment. An insignificant group of respondents which constitute 2 per cent said that there was no political interference while 34 per cent were undecided. Among the respondents who felt that there was political interference in recruitment, the highest percentage is those who are in post-graduates and above category. The highest percentage of employees who were undecided on the issue is of the matric qualification category. From above, it is inferred that the respondents with a higher qualification were more aware of the organizational climate compared with the ones with lesser educational background or probably they felt hesitant to openly discuss and explore such a sensitive matter with others.

5.2. Training and Selected Variables:

Training is a very important sub-system of HRD. In these proceeding paragraphs an attempt has been made to analyze as to what extent the employees feel about various aspects of training in HPTDC. Training assumes even more significance in HPTDC as it is a service organization.

5.2.1. Specific Training Policy-Respondents Views:

The respondents were asked as to whether a clear cut training policy existed in their organization or not, whether training needs were identified from time to time and whether the management had formulated a policy on this or not. The views of respondents are recorded in the Table5.6.

Table 5.6: Specific Training policy

Nature of Response	Number of Respondents	Percentage
Yes	9	18
No	41	82
Total	50	100

It is clear from the Table 5.6 that 82 per cent of the respondents felt that the training policy was arbitrary. It does not clearly lay down any parameters for training to its employees. The employees see it as an ineffective and inefficient policy. A majority of the employees are found unhappy over the existing number of training policies.

5.2.2 Training Policy of Respondents Formally Trained:

The respondents were asked whether they had received any form for formal training to facilitate their trade/department work on being recruited by HPTDC or subsequently. The response to this is presented in the Table 5.7.

Table 5.7: Trained respondents

Nature of Response	Number of Respondents	Percentage
Yes	12	24
No	38	76
Total	50	100

As per the recorded responses, it is observed that *only* 24 per cent of the respondents received formal training by HPTDC. Remaining 76 per cent respondents were untrained and had learned their trade work gradually over the years. Thus, Table 5.7 indicates lack of training which on the contrary, ought to be the mainstay in any service organization. Another point

which is pertinent here is that some of the respondents who had been trained were not seeing their services being utilized in the field in which they received training thereby amounting to wastage of training, time and energy.

5.2.3. Experience of Inability in the Absence of Proper Training – Respondents’ Opinion.

As is clear from Section 5.2.2, a majority of the respondents were found untrained. Therefore, it became imperative to ask the untrained respondents if they felt unable to perform in the absence of proper training. Their responses are reproduced in the Table 5.8.

Table 5.8: Experience of Inability due to lack of Training

Nature of Response	Number of Respondents	Percentage
Often	26	68
Sometimes	9	24
Rarely	3	8
Total	38	100

Out of the 38 respondents who had not been given training, a majority constituting 68 per cent experienced the inability often since they were not trained. They felt that they could have performed their job better if they had been imparted training. However 24 per cent felt the lack of training only sometimes as against 8 per cent who did not think training was important and think that it would not have affected their performance much in a positive manner. They rarely missed training.

5.2.4 Adequacy of Training Facilities- Respondents views:

Consequent to the finding that 76 per cent of the respondents are untrained and out of this 60 per cent often felt the inability to perform due to lack of training, it is pertinent to find out the underlying cause. In order to do so, the respondents were asked if it was due to lack of training infrastructure available with HPTDC. The responses to this have been tabulated in the Table 5.9.

Table 5.9: Employee Perception on Adequacy of Training Infrastructure

Nature of Response	Number of Respondents	Percentage
Yes	41	82
No	9	18
Total	50	100

The responses regarding adequacy of training are quite the reverse to that of Section 5.2.1 and 5.2.2. Contrary to expectation, 82 per cent of the respondents said that the HPTDC had adequate infrastructure to impart training to their personnel. A meager 18 per cent felt that the training facilities were not adequate. This leads to the conclusion that the training facilities are not being utilized to their optimum extent by HPTDC and the same is also evident from Table 5.9.

5.2.5. Correlation between Training and Promotion-Respondents' Perception

In an effort to fathom the importance given to the training sub- system by the management of HPTDC, the respondents were asked if there was any correlation between the training and promotion in their organization. The idea was to ascertain if the management felt it essential to give weightage to trained personnel in promotions to make the organization more professional in its outlook. The responses recorded are presented in the Table 5.10.

Table 5.10: Correlation between Training and Promotion-Responses of Employees

Nature of Response	Number of Respondents	Percentage
To Great Extent	3	6
To Some Extent	11	22
Not at All	36	72
Total	50	100

As it is indicated in the Table 5.10, 72 per cent of the respondents were of the opinion that there was no correlation between training received by the employee and the promotion granted to them in the organization. In order to verify this, the researcher checked the performance appraisal forms of HPTDC. There was no column wherein the training/ courses undergone by the employee would be recorded. Thus, there was no weightage given to training in the performance appraisal.

5.3 Performance Appraisal System with Respect to Selected Variables

In this section, it is aimed to record and analyze the opinion of the respondents with regard to the performance appraisal system of HPTDC. Even though the HPTDC follows a confidential system of appraisal, it is essential to find out what the employees think about it. A very interesting trend was observed in the opinion of the employees and it has been discussed in the following sub-section:

5.3. 1. Satisfaction among the Employees With Regard to Performance Appraisal

An interesting trend emerges from the Table 5.11 as majority of the respondents i.e. 64 percent felt dissatisfied with the appraisal system whereas only 36 per cent felt satisfied with regard to the appraisal system.

Table 5.11: Employee Satisfaction with regard to Performance Appraisal

Nature of Response	Number of Respondents	Percentage
Yes	18	36
No	32	64
Total	50	100

5.3.2. Extent of Fairness of Appraisal System – Respondents’ Views

Performance appraisal system in any organization is susceptible to personal bias, favoritism etc., thereby making it unfair to the employees. This adversely affects the employee’s motivation and morale and eventually leads to grievances. It is essential to have a fair and objective appraisal system. Confidential appraisal system is giving way to open appraisal system in modern organizations.

The respondents’ impression of fairness of appraisal system in their organization is presented in the Table 5.12.

Table 5.12: Extent of Fairness of Appraisal System

Nature of Response	Number of Respondents	Percentage
To Great Extent	36	72
To some Extent	11	22
Not At All	3	6
Total	50	100

A majority of the respondents i.e. 72 per cent felt that the appraisal system was fair to a great extent, while 22 per cent felt that the system was fair but only to some extent. That the employees are satisfied with the performance appraisal system to a great extent and have faith in it.

5.3.3. Confidentiality of Appraisal Report – Respondents’ Opinion

According to the latest theories in the field of HRD, the appraisal system should not be confidential and the appraisee must be given feedback on his assessment. However most organizations including HPTDC follow the conventional confidential system of appraisal. In order to know, what the employees feel about the form of appraisal, they were asked to give their views in this regard.

Table 5.13: Confidentiality of Appraisal System

Nature of Response	Number of Respondents	Percentage
Yes	8	16
No	42	84
Total	50	100

A large number *i.e.* 84 per cent of the respondents were against the confidential appraisal system. They thought it was their right to know how they were being assessed by their superiors. They were in favour of an open appraisal system. However, 16 per cent felt that the appraisal should be confidential. Their argument was that an open system would lead to strained subordinate – supervisor relation which would prove detrimental to the organization.

5.4 Promotion and Selected Variables

Every employee aspires to rise in life. When the deserved promotions do not come in time, it leads to frustration and dissatisfaction among the affected employees. To gauge the satisfaction/ dissatisfaction among the employees, their views are recorded in the following sub-sections.

5.4.1. Satisfaction with the Promotion Policy - Employees Perceptions

The respondents were asked to indicate their satisfaction/ dissatisfaction with the promotion policy in their organization. The views they expressed are recorded in Table 5.14.

Table 5.14: Satisfaction with Promotion policy

Nature of Response	Number of Respondents	Percentage
Yes	9	18
No	41	82
Total	50	100

In the above Table, 82 per cent of the respondents mentioned that they were not satisfied with the promotion policy. According to them, they were dissatisfied in this regard, since promotions were frequently given on extraneous considerations. Employees thought that those who were close to the management got promotions faster than the others. In certain trades, there was little career planning. Cooks for instance had little or no avenues for promotion. They, therefore, had the highest dissatisfaction in this respect. Nevertheless 18 per cent of the respondents were optimistic and rated the promotion policy satisfactory.

5.4.2. Criterion for Promotion - Respondents Opinion (Qualification wise)

As per the Recruitment and Promotion Rules (Revised) HPTDC, the basic principle for promotion is merit, efficiency, past performance and seniority if other factors are equal. Since a majority of respondents were dissatisfied with the promotion policy they were asked as to what suitable criterion they would suggest in terms of merit, seniority etc. for promotion.

Table 5.15: Criteria for Promotion

Nature of Responses	Number of Respondents (Educational level)			
	Matric	Graduate	Post-Graduate & above	Total
Merit	3(10.7)	6(46)	4(44.4)	13(26)
Seniority	15(53.5)	3(23)	2(22.2)	20(40)
Mixed	10(35.7)	4(30.7)	3(33.3)	17(34)
Total	28(100)	13(100)	9(100)	50(100)

$$\chi^2 = 2.73, P > .001$$

(Note: Figures in parentheses indicate the percentage of column total)

On an analysis of the data in Table 5.15, a clear pattern has emerged. The matriculate respondents were in favour of seniority as a criterion for promotion whereas graduates and post- graduates were in favour of merit. Such a trend is probably due to the feeling of insecurity among employees with low qualification. The more qualified do not feel insecure on this account and therefore advocate merit as the criterion for promotion. After applying the χ^2 test, it is found that the calculated value of χ^2 is less than the Table value at 1 per cent level of significance. It leads to the conclusion that there is an insignificant difference in the opinion of respondents regarding accepted criterion for promotion as far as education level is concerned.

5.4.3. Criterion for Promotion - Respondents Opinion (Gender-Wise)

The Table 5.16 indicates that 26 per cent of male and 25 per cent of female respondents were in favor of merit as a criterion for promotion whereas 38 per cent of male and 50 per cent of female respondents were in favor of seniority while 35.7 per cent of male and 25 per cent of female respondents were in favor of mixed criterion for promotion. After applying Chi-square test, it is found that the calculated value (.068) is less than the Table value at 1 per cent level of significance. Hence, the null hypothesis is accepted with the inference that there is an insignificant difference in the opinion of both male and female as far as the promotion HPTDC is concerned.

5.16: Gender-wise Respondent's Opinion Regarding Promotion

Responses	Male	Female	Total
Merit	11(26)	2(25)	13(26)
Seniority	16(38)	4(50)	20(40)
Mixed	15(35.7)	2(25)	17(34)
Total	42(100)	8(100)	50(100)

$$\chi^2 = .068, P > .001$$

(Note: Figures in parentheses indicate the percentage of column total.)

5.4.4. Respondents Opinion Regarding Promotion-Age-wise

Table 5.17 reveals that 42.8 per cent of the respondents in the age group of 20-30 years were in favour of seniority as a criterion for promotion, 28.5 per cent were in favour of merit and an equal percentage of respondents were in favour of both merit and seniority. Among the age group of 31-40 years 41.6 per cent were in favour of seniority, 25 per cent were in favour of merit and 33.3 per cent were in favour of mixed criterion. In case of age group of above 40 years 25 per cent favored merit. 33.3 per cent were in favour of seniority and 41.6 per cent were in favour of mixed trend. Hence majority of the respondents i.e. 40 per cent were in favour of seniority as a criterion for promotion.

Table 5.17: Age-wise Respondent's opinion Regarding promotion

Nature of Response	Number of Respondents (Age-wise)			
	20-30 years	31-40 years	40 year and above	Total
Merit	4(28.5)	6(25)	3(25)	13(26)
Seniority	6(42.8)	10(41.6)	4(33.3)	20(40)
Mixed	4(28.5)	8(33.3)	5(41.6)	17(34)
Total	14(100)	24(100)	12(100)	50(100)

$$\chi^2 = 0.16, p > .001$$

(Note: Figures in parentheses indicate the percentage of column total.)

On the application of χ^2 test, it is found that χ^2 value is less than the Table value at 1 per cent level of significance. Therefore, the null hypothesis is accepted with the conclusion that there is an insignificant difference in the opinion of (different age- groups) respondents regarding promotion.

5.4.5 Edge of Good Performance in Promotion – Respondents' Views

The respondents' views regarding good performance being rewarded with promotion are recorded in the Table 5.18.

Table 5.18: Edge of Good Performance in Promotion

Nature of Response	Number of Respondents	Percentage
Often	2	4
Sometimes	10	20
Rarely	38	76
Total	50	100

A majority of the respondents i.e. 76 per cent were of the opinion that good performance by the employees was rarely recognized in their organization and had very little or no correlation with promotion. About 20 per cent respondents felt that performance was sometimes rewarded with promotion. A meager 4 per cent however thought that promotion was often given to good performers.

5.5.1. Satisfaction with Regard to Getting Right Job

The response of the respondents was recorded sex-wise on whether the respondents thought that the right man was on the right job or not in their organization. The rationale behind recording the responses sex-wise was that it is generally believed that females are given soft jobs compared to males.

Table 5.19: Satisfaction with regard to Getting Right Job (Gender-Wise)

Nature of Response	Number of Respondents (Gender-wise)		
	Male	Female	Total
To Great Extent	2(5)	-	2(4)
To some Extent	14(33)	3(38)	17(34)
Not At All	26(62)	5(62)	31(62)
Total	42(100)	8(100)	50(100)

(Note: Figures in parentheses indicate the percentage of column total.)

Both males and females had identical opinion on whether right man was on the right job or not, while 62 per cent in both cases felt that right man was not at all on the right job, 33 per cent males and 38 per cent females were of the opinion that right man was on the right job to some extent.

5.5.2. Satisfaction with Regard to Rightman on Right Job (Age-wise)

Table 5.20 clearly shows that 7.14 per cent of the respondents in the age group of 20-30 years were satisfied to a great extent regarding the selection of rightman for right job, 57.14 per cent and 35.7 per cent were satisfied to some extent and not at all, respectively. Among the age group of 31-40 years, 4.16 per cent of the respondents were satisfied to a great extent, 25 percent of the respondents to some extent, 70.8 'not at all'. In case of age- group of above 40 years, 25 per cent of the respondents were satisfied to some extent and 75 per cent were dissatisfied with the manpower planning system of the corporation. After applying the χ^2 test, it is found that the calculated value is more than the table value at 5 per cent level of significance which leads to the conclusion that there is a significant difference in the opinion of respondents regarding manpower planning.

Table 5.20: Satisfaction with Regard to Rightman on Right Job (Age-wise)

Nature of Responses	Number of Respondents (Age-wise)			
	20-30 years	31-40 years	40 years and above	Total
To Great Extent	1(7.14)	1(4.16)	-	2(4)
To some Extent	8(57.14)	6(25)	3(25)	17(34)
Not At All	5(31.7)	17(70.8)	9(75)	31(62)
Total	14(100)	24(100)	12(100)	50(100)

$$\chi^2 = 4.78, \quad P < .05$$

(Note: Figures in parentheses indicate the percentage of column total)

5.5.3 Satisfaction with Regard to Rightman on Right job (Education Level-wise) :

Table 5.21 indicates that 7.14 per cent of matriculate respondents were satisfied to a great extent regarding right man or right job. While 35.7 per cent of matriculates, 38.5 per cent of graduate and 22.2 per cent of post graduate were found satisfied to some extent, 57.1 per cent, 61.5 per cent and 77.7 per cent were not satisfied among their respective categories. As the table value of χ^2 at 1 per cent level of significance is less than the calculated value, the null hypothesis is accepted with the inference that there is an insignificant difference in the opinion of respondents regarding the selection of right man on right job.

Table 5.21: Satisfaction with Regard to Rightman on Right job (Education Level-wise)

Nature of Responses	Number of Respondents (Education-level)			
	Matric	Graduate	Post Graduate & above	Total
To Great Extent	2(7.14)			2(4)
To some Extent	10(35.7)	5(38.5)	2(22.2)	17(34)
Not At All	16(57.1)	8(61.5)	7(77.7)	31(61)
Total	28(100)	13(100)	9(100)	50(100)

$$\chi^2 = 0.38, \quad P > .001$$

(Note: Figures in parentheses indicate the percentages of column total.)

5.6. Faith in Grievance Mechanism:

It is very essential for any organization to have a functional grievance mechanism, so that the employees do not feel exploited by their superiors. In order to measure the extent of faith of respondents in the mechanism, their views were sought and the same are presented in the Table 5.22.

Table 5.22: Faith in Grievance Mechanism

Nature of Response	Number of Respondents	Percentage
To Great Extent	8	16
To some Extent	12	24
Not At All	30	60
Total	500	100

As is evident from the Table 5.22, a majority of the respondents i.e. 60 per cent do not have any faith in the grievance mechanism. While 12 per cent do have faith in the mechanism up to some extent and only 8 per cent are totally satisfied with the grievance mechanism.

5.7 Employees Overburdened with Work-Respondents' Views:

In order to assess proper distribution of work and correct manpower planning, the respondents were asked whether they were overburdened with work. Their responses are recorded in the Table 5.23.

Table 5.23: Employees Overburdened with Work

Nature of Response	Number of Respondents	Percentage
Often	26	52
Sometimes	19	38
Rarely	5	10
Total	50	100

It is evident from the above table that a majority of the respondents i.e. 52 per cent felt that they were overburdened sometimes, whereas 10 per cent of the respondents opined that they rarely have any work to do and for the whole day they sit and remain idle in the office.

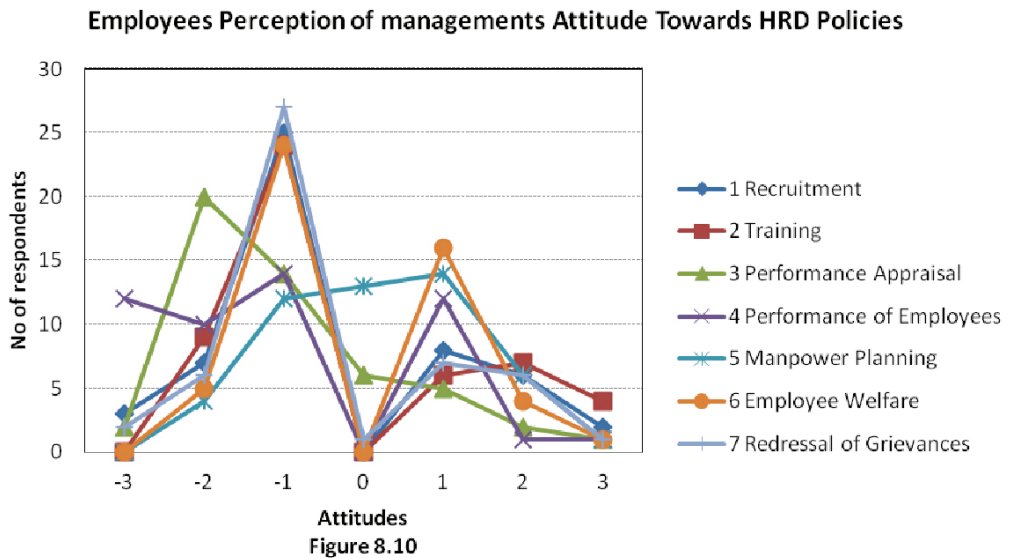
5.8 Employees' Perception towards Management's Attitude Regarding HRD Policies

All the 50 respondents have given their responses regarding the management's attitude. Their responses are tabulated in the Table 5.24.

Table 5.24: Employees' Perception towards Management's Attitude Regarding HRD Policies

S.No.	Policy Category	Score (Number of respondents)						
		-3	-2	-1	0	1	2	3
1	Recruitment	3	7	25	-	8	6	2
2	Training	-	9	24	-	6	7	4
3	Performance Appraisal	2	20	14	6	5	2	1
4	Performance of Employees	12	10	14	-	12	1	1
5	Manpower Planning	-	4	12	13	14	6	1
6	Employee Welfare	-	5	24	-	16	4	1
7	Redressal of Grievances	2	6	27	1	7	6	1

The above data has been graphically represented in Figure 1.

**Figure 1: Employee's Perception of Management's Attitude towards HRD Policies**

CONCLUSION

It is found that a majority of employees have a slightly negative attitude towards the management as far as the recruitment is concerned. It is also observed that a majority of the respondents have felt dissatisfaction with the recruitment components. This corroborates with the data of Table 5.1 presented earlier.

As is evident from Table 5.10 that a majority of employees have a slightly negative attitude towards the management in respect of training, although about 34 percent of the employees have positive opinion also, ranging from slightly positive to highly positive.

It is observed that a majority of employees i.e. 82 percent are found unhappy over the existing training policy. Further, large numbers of respondents (40 percent) have a moderately negative attitude towards management in the context of performance appraisal. Another 28 percent have a slightly negative attitude. Only 16 percent have a positive attitude in this regard. It is inferred from the above data that a large majority of respondents have a negative attitude towards management with regard to promotions, while 24 percent have a highly negative attitude, 20 percent have a moderately negative attitude and 28 percent have a slightly negative attitude. Even among the positive side, 24 percent have only a slightly positive attitude. Overall the tilt is predominantly on the negative side. So far as the employee perception of management with regard to manpower planning is concerned, slightly positive trend is observed in this respect. There are 28 percent of the respondents who have a slightly positive attitude towards management in this regard. This is followed by 26 percent who are indecisive on this issue and 24 percent have a slightly negative attitude. Further 48 percent of respondents have a slightly negative attitude in this respect, 32 percent had a slightly positive attitude, 8 percent had a moderately positive attitude and 2 percent had a highly positive attitude. Overall the attitude is tilted towards the negative side.

A clear negative trend is visible from Figure 1. Big chunk of 54 percent respondents have a slightly negative attitude towards the management with regard to grievance mechanism. Total 70 percent respondents have a negative attitude in this regard. Only 28 percent have a positive attitude out of which 14 percent have only slightly positive attitude. The tilt is therefore predominantly on the negative side. While considering the above findings with the satisfaction of grievance mechanism, it is noted that a majority of the respondents i.e. 60 percent do not have any faith in grievance mechanism. This corroborates with the data of Table 9.22 presented earlier.

In a nutshell, it can be concluded that the role of HRD Policies is of great significance so far as the development of any institution is concerned. HRD Policies also play a dominant role in the development and performance of HPTDC. The management should concentrate on strengthening the HRD policies so that the employee can contribute cheerfully and meaningful way at an optimal level of efficiency.

REFERENCES

1. Baguley, P. (1994). *Improving Organisational Performance*. Maidenhead: Mc-Graw-hill.
2. Bennis, W. (1960). *Organisational Development*. Reading, Mass: Addison- Wesley.
3. Bhatia, A.K. (1982). *Tourism Development: Principles and Practices*. New Delhi: Sterling Private Limited, pp. 62-83.
4. Hayden, Robert (1973). Performance Appraisal: A Better Way. *Personnel Journal*, vol 52, July.
5. Kandula, Srinivas (2009). *Performance Management*. New Delhi: PHI, Third Printing.

6. KaurBawa, Sumninder (2007). *LIC of India: Impact of Privatisation*. New Delhi: Regal Publication.
7. Monga, M.L. (1983). *Management of Personnel Appraisal*. Bombay: Himalaya Publishing House.
8. Prasad, L.M. (2008). *Human Resource Management*. New Delhi: Sultan Chand and Sons.
9. Sapru, R.K. (1987). “*Personnel Management in Commercial Banks*.” New Delhi: Deep & Deep Publications.
10. Verma, M.M. (1988). “*Human Resource Development*.” New Delhi: Gitanjali Publishing House.
11. www.mbaknol.com/investment-management.

THE EARLIEST SETTLEMENT AT CHECHAR -KUTUBPUR

Arun Kumar*

ABSTRACT

Great civilization generally developed along the river banks. In the earliest time, micro-culture grew near the banks of perennial water sources like rivers and lakes. Gandak emerging through the Himalayas provided perfect condition for growth of sustainable human settlements. Many small and camp dwelling settlements were hidden in the womb of the Gandak plain. Chirand, Chechar-Kutubpur and Panr are the sites where the evidence of Neolithic settlement has been found. The micro- level Neolithic settlement took place at the time of late Pleistocene age. Settlement started directly on the yellowish compact-calcareous clayey earth. Perhaps, Mesolithic men migrated towards the Gandak plain from the Siwalik range of the Himalaya as well as the Vindhyan range. Earliest Chechar men were technically sound. They learnt the technique of tool making, kiln firing, pot making, stone bead and micro- tool making, food production, food cooking, house making, painting, use of pigments etc. There appears to be constant transaction between Chechars and other Neolithic sites such as Chirand, Panr, Maner.

Keywords: Ceramic, Gandak, Grey ware, Himalayas, Neolithic settlement, Pleistocene, Red ware.

INTRODUCTION

The archaeological site Chechar-Kuttubpur (25°36'30"N, 85°21'15"E) is situated about 20 km. south-east of Hajipur, on Hajipur – Mahanar road, along the northern bank of the river Gandak, under Bidupur block in the district of Vaishali. The mound is spread over an area of 800 m wide in north-south direction and about 2 km. long in east-west direction. The major portion of the cultural mound has been eroded by the river Gandak. There is a lowland (depression) area, about 2 km north to the mound and a paleo-channel, named Ghaggar flows from west to east in - between depressions.

The cultural and archaeological evidences (sculptures, mound, structures etc.) have been found from Hajipur to Mahanar, continuously along the river bank. There are several solitary mounds explored by the author which is spread from west to east in the lowland like Chaur

* Arun Kumar is Research Investigator at Kashi Prasad Jayaswal Research Institute, Patna. E-mail: arunkrd-umri@gmail.com

area at Dhighi Kala, Bajitpur Malahi, Majhauri, Khajabatta and Dhanauti. The Chalcolithic and NBPW(Northern Black Polished Ware) associated potsherds have been recovered from these mounds. Most of the excavations have been conducted at the Kutubpur in 1913-14 and 1977-78. Several trenches have also been laid at Chechar in 1988-89. The archeological importance of this mound came to light, when the mound was eroded by the river Gandak. Large number of antiquities and other cultural materials including brick structures came to light. Some other cultural materials were also collected by local people. Chechar-Kutubpur is multicultural site. The archaeological excavations have been conducted by the A.S.I. in 1977-78 and 1988-89. In 2013-14, Directorate of Archaeology, Government of Bihar has conducted deep investigation. The settlement patterns started here by nomadic-hunting people during meso-neolithic period. Archaeological excavations at Chechar-Kutubpur led the discovery of nine phases of cultural occupations:

Period 1st (a) - Meso-neolithic (Aceramic culture)

Period 1st (b) - Neolithic (Red Ware)

Period 2nd – Chalcolithic (Black & Red Ware)

Period 3rd – Iron Phase

Period 4th – NBPW Phase

Period 5th – Sunga – Kushan Phase

Period 6th – Gupta Phase

Period 7th – Pala Phase

Period 8th -Pre-Mughal glazed ware phase

The settlement pattern at micro-level, started here by the nomadic-hunting people on the yellow compact calcarious clayey earth at the time of late Pleistocene age. Siwalic or Vindhyan Mesolithic migrants shifted towards the perennial river valley in search of food. They settled in this region and made their aceramic culture for a very short period. Large number of Microlithic flake and core tools of chert, chalcedony, agate, carnelian, crystal, quartz, and sand stone were recovered from the Pleistocene deposit. The important tools were blade, scraper, lunette, burins, knife, cleaver etc.

The earliest ceramic settlement started on the silty alluvial soil of deep grayish in colour of fine texture having calcarious nodules and mica particles. The earliest settlers were the hunter-peasantry society, who used to indulge in farming, cattle rearing as well as hunting. They have also made several types of potteries which was hand-made. The red ware is dominant pottery. Black and red ware and burnished grey ware have been discovered. The corded and mat impressed red ware as well as rusticated ware (RW, BRW) used by the people. These people used bone tools (arrow head, point, pins, bodkins, chisels etc.), microliths (core and flake tools)- blades, burins, scrapers, lunettes, knife, points needle, beads of terracotta and semi-precious stones etc. In the recent years, many neolithic sites have been discovered in Indian sub- continent and Eastern Asia such as Chirand, Chechar, Panr(4261-2412BC), Maner, Lahuradeva(9000-3000BC), Imlidih Khurd, Sohgaora, Jhusi, Hetapati, Senuwar, Taradih,

Golbai Sasan, Kuchai, Koldihwa, Burzhom, Gufakara, Utnoor, Brahmagiri, Tekkalkota, Narsimhapur, Piklinal Mehargar, Xlanrendong cave (21000-19000BP), Yuchanyan cave (21000-13800BP), Dingsishan Nanchuangtou (11,500-11000BP), Donghulin (11000-9500BP), Hutouliang in China, Odai Yamamoto (16540-13070BP) and FuKui cave in Japan; Gasya (13000BP), Gromatukha (12,300BP), Ust- Karenga complex (11,200BP), Usti-Kyakhta (12,595BP) in Russia (Siberia)

CERAMIC INDUSTRY

The red ware, black and red ware and grey ware (burnished and unburnished, both), corded mat, impressed red ware sherds are found from the Neolithic context in Indian sites and out of India. The post-ochre painting incised and appliqué decoration is found from Utnoor, Golbai Sasan, Senuar, Taradih, Piklihal, Sangamkallu, Brahmagiri and other sites. The long tubular spouts found from Chirand, Chechar-Kutubpur and Panr, have no parallel among Indian neoliths. Various types of pottery have been discovered from the Chechar- Kutubpur neolithic sites.

The ceramic associated with the Neolithic culture at Chechar-Kutubpur includes red ware, grey ware and black and red ware. The pots are mostly hand-made. The surface treatment is found applied on the red ware, black and red ware and grey ware.

RED WARE

Red ware was a dominating pottery style and had various shapes, size, types and fabric used by the primitive society. The shapes in ware are vases, jars, spouted vase, bowls, perforated bowls, perforated legged bowls etc. The section of the pottery is micaceous, gritty and rough, core is generally black. The sand mixed clay was used for the manufacturing of the potteries. Sometimes, paddy husk was mixed with clay for the manufacturing of thick section potteries. Potteries are generally well fired. Vases and storage jars are generally of medium size with globular body. The neck portion in all the vases/jars is luted with main body. Pots are mostly handmade. The dabbing and beating marks are prominently traced on both surfaces. The upper part of the vases/jars are burnished and treated with the thick or thin slips in different shades of red pigment such as brick red. Chocolate, tan, pale red or buff is the dominant colour. The treatment was applied on the upper portion of the outer surface and down to neck of inner surface. The rough surfaces of the pots were made smooth due to thick surface treatment and by burnishing. The rustication was achieved by the help of finger or with the help of brush. These types of pots have been found from the Chirand and Panr in the Gandak Plain. The rustication on the pots of Neolithic strata at this site is so fine-grained that it can be compared with rusticated pre-Harappan pottery from Kalibangan and Amri. Some sherds of corded and mat impression are recovered from the Chechar- Kutubpur. Some sherds have tortoise shell like impression. Long tubular spout and channel spout luted with body of the vase has been reported from Chechar, and is unique of its kinds. Its height is prolonged to the height of rim. Vases/Jars are used for cooking and storage purpose. Some sherds contain the soot mark; which throw light on the use of the pots. Sherds of buff ware also found in good number.

Decoration

The decoration patterns were always applied on the rim, neck and shoulder portion. Potteries are decorated with appliqué rope design graffiti marks representing different designs, incised lattice designs, oblique and parallel lines and other patterns. Vermillion decoration applied on the rim and shoulder portion, Ocher Painting of solid circle and parallel lines applied on the shoulder portion has been traced.

Bowl

Red ware bowls has been found in less frequency. It has generally deep globular base, vertical straight sides and featureless or everted rim, micaceous, rough section with blackish core. It has medium fabric, made with lavigated clay and well fired. The lipped bowl, perforated bowl and perforated legged bowl, oval bowl, stand and footed bowls have been recovered from the Neolithic strata. Generally, the inner surface has been smoothened on the application of slip and burnishing over it.

Basins and dishes are conspicuously absent. It is only found in the late phase of Neolithic period.

Grey Ware

The burnished and unburnished plain grey wares have been discovered from the Chechar-Kutubpur in good frequency. The important shapes are bowl, small vases and goblet only, which are made of levigated clay mixed with sand and has porous rough gritty thin to thick blackish grey section and mild fired, medium fabric and everted knife edged rim.

Bowl

Generally medium and small sized bowl have been found. Burnished grey ware bowls are treated with thick coat of slip in different grey shades i.e. dark grey to pale yellowish grey and burnished by burnisher. Post-firing ocher painted burnished grey ware sherds have been encountered mostly from the transitional stratum of Neolithic- Chalcolithic. Pedestaled and plain based bowls are found from here.

Vases

The burnished and unburnished grey ware sherds have been recovered from Chechar-Kutubpur. Sometimes both surfaces are treated with grey slip or sometimes only outer surface and inner surface of pots are treated with slip and inner lower portion remains untreated. The inner surface make rough with the scooping. Small size vases (like *Lota*) have been recovered.

Black and red ware

Very less frequency of this ware has been found at the earliest stratum. The section of this ware is micaceous rough and gritty. It was medium fabric and well fired, sometimes treated with thin slip or sometimes devoid of surface treatment. At early phase, the section of the BRW is not deep black. It is smoky black but at later phase burnished BRW comes into the tradition. The hard and strong slip was used for the surface treatment. The important shapes are vase/ jars, bowls, dish-on-stand etc.

Vases

Vases have the same features as its contemporary red ware. It has long concave neck, splayed out everted knife- edged rim with wide mouth and globular body. It was sometimes decorated with appliqué rope design and different patterns of incision.

Bowls

Deep bowl with globular base and straight or convex sides, featureless or everted /adverted rim bowls were found. Lipped and channels spout, perforated and footed bowls were also found. Bowls are treated with slip and both surfaces are highly burnished and smooth.

Dish

Poorly developed rim and sides of dish have been found. It is absent from the lower stratum of Neolith. It comes from the upper strata.

Dish-on- stand has also been found in the upper strata. In the basin, the same is totally absent.

Black slipped ware has been found at transitional phase of Neolithic- Chalcolithic or at very later phase of the Neolith.

Cord- impressed Pottery

As the term suggests, cord-impressed or mat-impressed pottery bears cord or mat- impressions mostly on the outer surface, either partially or fully. Impressions are made either as a decorative pattern or the surface is roughened with a paddle wrapped with a cord or mat or the remains of pot's surface over the surface of pot giving the impression of cord or mat at the time of beating and dabbing during leather- hard condition. These impressions can be, either as stylistic or technological or both, besides its functional aspect, if there is any. Sometimes impressions are prominent or sometimes very faint. All the terms, like cord- impressed, cords marked, mat impressed and corded wares, are used to designate this kind of pottery. This pottery has a long antiquity in India and Asian context.

Evidence of House

Earliest people at Chechar-Kutubpur lived in hutment and on the leveled floors. They made their house with reed, bamboo and leaves of grasses and plants. The excavation of paved floors, pot holes, large number of the chunk of burnt clay with reed & bamboo impression, burnt floors throw light on the house planning of the earliest settlers. The hearth and oven were used for the cooking purposes. People lived in a hut made up of reed walls with mud plaster. They made semi-solid paste of mud with the help of husks for the application on the reed wall. They made their roof with grasses.

Food –habits

The earliest settler of Chechar-Kutubpur used hunting, fishing, animal rearing and seed production for their livelihood. They knew the farming technique. They used to hunt big and small animals, birds and fishes as bones of these fauna have been found in fairly good number. The cutting, splitting and cracking marks are found on the bones. Some bones are charred.

They used bone-marrow which is a rich source of healthy food. Besides these, they might have been collecting roots, leaves, corns, stems, fruits and seeds from the nature. Paddy husk have been found in the burnt clay and section of the coarse ware which is an evidence of cereal cultivation. The evidence of hearth and oven, charcoal, ash, soot marks on the ground and vases give important and valuable information about the cooking and food habits of the earliest settlers.

Antiquities

The implements made of bone, antler, stone and shells were found during the excavations and the surface collection include arrow heads, pins, points, scraper, bodkins, awls, needles, borers, styluses, ground stone celt, cleaver and microlithic tools (scraper, blades, pins, point, lunettes, knife etc.). Earliest settlers used beads of semiprecious stones (like agate, Chalcedony, crystal, jasper, Carnelian, steatite, terracotta and bones. They used hopscotch for the playing habits. The evidence of factory site has come to light. Earliest settler brought raw material of semi-precious stones and made their tools and ornaments. Discoid and drum- shaped beads of steatite have been found in good number. Big size of TC balls has been found which was used for the hunting or playing purposes.

The earliest settlers were well organized and systematic. They established technically sound society in rural environment. They had sufficient knowledge about the cultivation of cereals, plants, animal rearing, ceramic industry, tool making, cosmetics, house making and food cooking. They lived in community. They also established social structure. According to the Brahmanical text, *Satapatha Brahman*, Videgha Mathava settled an organized society on the eastern bank of the Sadanira. Perhaps, these sites from Hajipur to Mahanar allude to the mythical sites which were described in different ancient texts.

DISCUSSIONS

As far as the origin of pottery is concerned in entire India and Asia, earliest people first started pottery making, at very restricted scale when they were food gatherer and lived between the hilly range and perennial river banks. But as time elapsed, they settled at the river bank, and established aceramic primitive simple rural economic and cultural society. They mastered animal rearing and food production. It was a critical moment of history. The first Cultural Revolution occurred. After the domestication of grains and expertise in cultivation, they started ceramic culture at the river banks. On the basis of the presence of rice husks, phytoliths and paddy straw found at the most of the Neolithic site, suggest that the invention of pottery was necessitated due to the need of problem of food storing and cooking of food grains. The hunting and fishing were the possible earlier economic activities rather than the cereal production. People have used pottery for cooking meat, fish and especially for extraction of fat from the animals. A comparison of the manufacturing technique, surface treatment and decoration styles of the early pottery found in India, suggest a similar development of pre-historic cultures with minute variations. The wide distribution of early pottery making in India and other parts of Asia can be explained as the result of inter-societal interaction of people living in different environmental condition. The earliest ceramic of this site show

homogeneity with Panr, Chechar, Senuwar and other Neolithic sites. The earliest settlers of Chechar-Kutubpur had used stone, bone, terracotta and wood carved tools. Early settlers used to make their bows and arrows, spears, forks, tridents, strainer, projectile for missiles, all made of wood. But the evidences of wooden tools have not yet been recovered from this pre- historic site because it is degradable organic material.

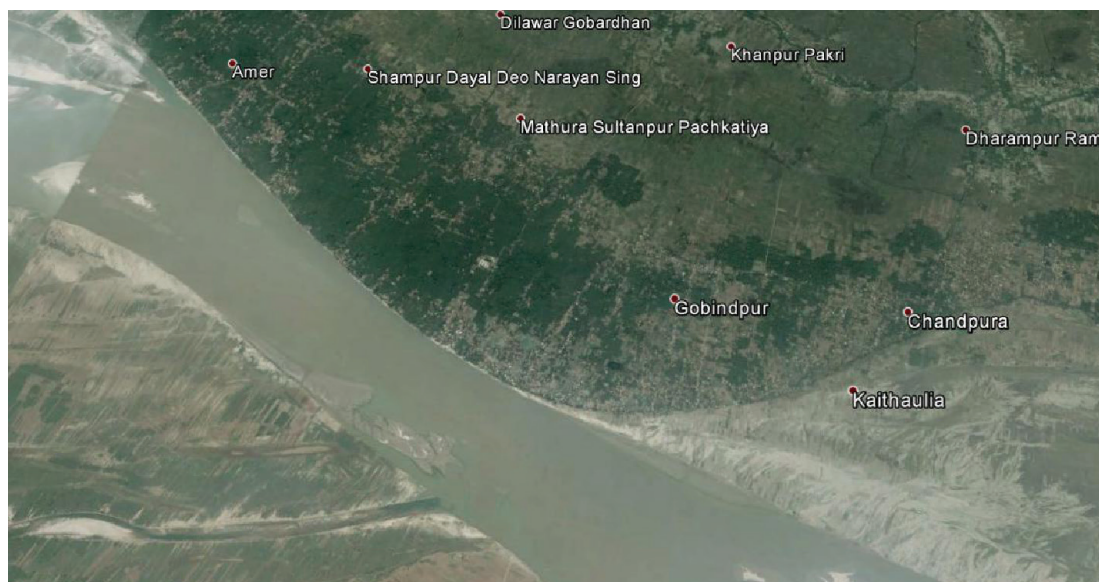


Image 1: Satellite image of Chechar, Vaishali District, Bihar



Figure 1: Stone Beads



Figure 2 : Raw Material



Figure 3: BRW Sherds



Figure 4 : Coarded ware



Figure 5 : Decorated Potsherds



Figure 6 : Coarded ware



Figure 7 : Coarded ware



Figure 8: Stone Tools

REFERENCES

1. Thapar, B.K.(ed.) (1980). *Indian Archaeology 1977-78, A Review*.New Delhi: Arcaheological Survey of India.
2. Joshi, M.C.(ed.) (1993). *Indian Archaeology 1988-89, A Review*. New Delhi: Arcaheological Survey of India.
3. Sinha, B. P.(ed.) (2000). *Directory of Bihar Archaeology: Silver Jubilee Year Publication* Patna: Bihar Puravid Parishad.
4. Sinha D. P.(ed.) (1993-94). *JBPP*, Vol. **XVII & XVIII**. Patna
5. Kumar, Arun(ed.) (2013). *Pragya Bharti*, Vol. **XVI**. Patna
6. Indian Archaeological Society. (2012). *Puratatva*, No. **42**. New Delhi.
7. Mishra, Ratneshwar & Jha, Pankaj (eds.) (2013). *Mithila: Rich Heritage Proud identity* New Delhi: Readers Press.
8. Dixit, K.N. and Hazarika, Manjil (2012). The Earliest Pottery in East Asia: A Review, *Puratattva* **42**: 227-237

CONQUEST OF JAMMU AND KASHMIR AND EARLY EVOLUTION OF LEGISLATIVE SPHERE

P. Kumar*

ABSTRACT

On 26 October, 1947 Maharaja Hari Singh signed Instrument of Accession with India. This document was in standard form and similar to those as signed by other erstwhile 554 princely states of India. Many allege that Kashmir was sold by the British unethically to Gulab Singh under the 'Treaty of Amritsar'. The present paper throws light over the transfer of the state to the Dogra kings with an objective perspective.

Keywords: Decrees, Gulab Singh, Hari Singh, Ranjit Singh, Sheikh Abdullah.

INTRODUCTION

Gulab Singh was born on 18th October 1792, in a Jamwal clan of Rajputs. His father, Kishore Singh was a distant relative of Raja of Jammu, Jit Singh. Gulab Singh entered the service of Maharaja Ranjit Singh of Punjab in 1812, having served under the Qiladar of Mungla, and Sultan Khan of Bhimbar.¹ He was invested with command over Jammu by Maharaja Ranjit Singh, at Akhnoor, on 4th May, 1822. Gulab Singh was Chief Minister of Punjab in 1846.² He was also granted the titles of *Dilawar-ul-Mulk* and *Fath Jang*, by Emperor Bahadur Shah II and *Rajrajeshwar* by the Sikh Durbar.³

THE ADVENT OF SIKH RULE

Ranjit Singh, the mighty Sikh ruler came to power in Jammu and Kashmir in 1819. He was the last formidable foe of the British. On 15 July 1819, the victorious Sikh army entered Srinagar. The commanders of the victorious army were personally ordered by the Sikh ruler that they should take special care for the safety and the security of the inhabitants of Kashmir and also ensure that no harm or injury be caused to any individual. Contrary to the victorious forces of the previous rulers, the Sikh forces on entering the city of Srinagar did not harm any civilian, spoil their honour nor loot the property of the wealthy shopkeepers. This was a new experience for the Kashmiris, as previously their property was looted and their honour despoiled on every occasion at the hand of the invading Afghan forces.⁴

*P. Kumar is Assistant Director at Mewar University, Gangrar, Chittorgarh, Rajasthan and a Research Scholar of Constitutional History of India.

BENEVOLENCE OF MAHARAJA RANJIT SINGH.

The conquest of Kashmir was a significant addition to the Sikh kingdom of Raja Ranjit Singh due to the strategic position of the Kashmir valley which could give protection to the kingdom of Punjab from the north. In 1822, Maharaja Ranjit Singh visited Purmandal and Jammu, even making lavish offerings at Purmandal to the Hindu temples and persons connected with their up-keep. He also took a holy bath at Purmandal. In Jammu, he donated money to the keepers of the most beautiful garden in Jammu, the Garden of Muglani Begum. He also visited a Thakurdwara in Mubarak Mandi, the palace of the Dogra rulers, a Dharamshala in Panjtirthi and a Muslim Fakir named Ali Shah. His respect and his generous offerings to the Hindu and Muslim people and their sacred places, and the fact that he assigned Jagirs for their maintenance and to support free kitchens, settled the minds and worries of the local people who had long suffered under previous invading armies⁵.

He along with the members of the royal family, used to take part alike in Hindu, Muslim and Sikh religious festivals. It is said that the Maharaja, on a few occasions, was even present at Id-ul-Fitr and during Muharram. As such, all the communities looked upon him not only as their well-wisher and protector but as one of themselves. Another reason for the great popularity he enjoyed, was that after conquering new territories, he didn't replace the vanquished rulers, whether Hindus, Muslims or Sikhs, with the disgrace; dishonor; and public contempt that other conquering rulers had exhibited, rather the Maharaja granted them jagirs and considerable provisions for their maintenance. The public welfare and secular attitude of Maharaja Ranjit Singh towards his subjects, irrespective of caste and creed, resulted in a communal harmony among all the religious communities.

THE DISTINGUISHED SERVICE RENDERED BY GULAB SINGH.

The Maharaja ruled Kashmir through his Nazims (Governors) and revenue farmers. However, many of the Governors (whose tenure of office was about two years) were either recalled for mal-administration or for non-fulfillment of their engagements. Gulab Singh and his brothers were in service of the Sikh Maharaja and were bestowed with the principalities of Jammu, the territories of Chamber, Chibal including Poonch and Jamnagar area respectively, for their loyal and distinguished service record. When Ranjit Singh died in 1839 and the first Sikh War against the British was lost in 1842, the East India Company demanded a payment of a forfeit amount. The Sikh power could not afford this and in alternative would be required to surrender all the territory from the Beas River to the Indus to the British Colonial rulers.⁶

GULAB SINGH - THE MEDIATOR.

Gulab Singh stepped in as a mediator between the British and the Lahore Durbar. He asked that he be allowed to pay the forfeit instead, on the condition that the British agree to have no claim over the territory. The British wanted the territories of Lahaul,

Kulu and some other areas of strategic significance including Chamba, which they withheld, by making a concession of Rupees 25 lakh to the forfeit amount of 1 crore rupees. The British decided to retain the territories of Lahore (which came under the control of Maharaja Ranjit Singh in 1809) and all the territory between the Beas and Sutlej rivers. They considered these territories profitable from the revenue point of view. However the areas of the largely hilly country, coming within Jammu and Kashmir State were relatively unprofitable, because it was for the most part unproductive and very little revenue accrued to the ruler. Maharaja Gulab Singh depleted his own treasury of 75 lakhs rupees (Nanakshahi), in order to prevent the largest single State of Bharatvarsh from coming under direct British control.

HISTORIC ‘TREATY OF AMRITSAR’ AND CORONATION OF GULAB SINGH.

By signing the Treaty of Amritsar in 1846, the British agreed to have no claim over all the hill country between the Indus and Ravi river, on payment of 75 lakh rupees (Nanakshahi); with a proviso that Gulab Singh agree to present annually to the British Government one horse, twelve shawl goats of approved breed and three pairs of Kashmir shawls, as a token of acknowledgement of British supremacy. They thus declared Gulab Singh the independent ruler of Jammu and Kashmir⁷.

MAHARAJA HARI SINGH’S LOVE OF JUSTICE.

In 1947, the area of the State of J&K was approximately 82,000 square miles and it held a population of just over four million. For over a hundred years the State of J&K had been ruled by the dynasty of Maharaja Hari Singh’s ancestors.⁸

After accession of J&K to India, Maharaja Hari Singh of J&K was accused by Pakistan of persecuting and harassing Muslims – when ironically the population of Muslims in the State just kept increasing and flourishing during the reign of his family. The Maharaja specifically instructed his ministers that there were to be no taxes imposed on any person just because he belonged to a particular community. Thus, contrary to the malicious statements of those who tried to defame the Maharaja and overthrow his rule (by instigating his Muslim subjects against him), there was not a single Muslim-specific tax imposed. The reports of Webb and Scott, which articulated the list of all taxes imposed, bears witness to this truth.⁹

His army consisted of 35% Muslims and the Police force in Jammu alone comprised 50% Muslims. There was a sizeable number of Muslims among the officers of his civil administration as well. Yet rather foolishly and intriguingly, Pakistan and some Kashmiri politicians maliciously accused the State Army and Police, comprising many Muslims, of discriminating against Muslims. Their claims were not perceived as anything but ludicrous. Till this day no person in India or Pakistan has been able to cite a single decree passed by the Maharaja that was discriminative against Muslims.¹⁰

Seen from the perspective of law enforcement, Jammu and Kashmir was a shining light

among the other Princely States in India, since it had the distinction of being the first State in India to have many landmark reformatory legislations passed during the reign of Maharaja Hari Singh from 1925 to 1947.

As opposed to the Afghan, Mughal and Sikh rulers of the past, Raja Hari Singh made a clear distinction between his private property including jewelry and state property. He left family jewelry, shawls, carpets and regalia worth crores of rupees, with the state treasury (Toshakhana). He never harassed the population for his personal ends. He believed in a secular regime. He gave his State the distinction of having the first legislative Assembly of popular representatives (in 1934) among all the Princely States in India. This Legislative Assembly was known as the Praja Sabha. The Praja Sabha was given the right to nominate a panel of six, out of which, he would choose two persons to join the Council of Ministers. Two such persons, Mirza Afzal Beig and Wazir Ganga Ram who secured the highest votes among the Muslims and Hindu candidates, were appointed Ministers. The Praja Sabha constituted on the 17th of October, 1934, consisted of 42 nominated and 37 elected members and was authorized to make provisions for the association of the people with this legislative body.

ILLUSTRIOUS CREDENTIALS OF MAHARAJA SIR HARI SINGH

He was one of the distinguished rulers in India to possess excellent credentials. By the time he was 20 years old, he was Commander-in-Chief of the Jammu and Kashmir State Forces. He proved himself to his subjects, to be extremely loyal and patriotic. He was a reformer and a nationalist. He was a member of the Imperial War Council during the World War II and an outstanding General. He is famous for his historic proclamation, *"Justice is my religion and merit alone will be considered deciding factor for all types of employments and caste, creed, religion or sex will receive no consideration."*¹¹ That was the reason why his administration and system of justice is to this day, accepted by impartial observers as being one of the best in the history of the State.

MAHARAJA'S OPPOSITION TO THE BRITISH RAJ

He was the greatest lover of freedom. He asserted that freedom from the British Raj was the inalienable right of the people of India and that too at the Round Table Conference on 12th November, 1930 in London, when he was speaking as the representative of the Princely States of India. He irked the British terribly when he refused to hoist the English flag on all prominent buildings in Jammu and Kashmir. He insisted on unfurling only the State flag of his kingdom.¹² He insisted on minimum interference from the British in his administration.

He abolished forced labour, beggary and child marriage. He modernized the agricultural sector by passing the decree of the Agriculturist's Relief Act that allowed a debtor to bring his creditors in a Court of Law for the settlement. Agriculturist's Relief Act freed the peasants and rural workers from the torture of money lenders and creditors.

MAHARAJA'S DECREES AS PRELUDE TO EVOLUTION OF LEGISLATIVE SPHERE IN J&K

During his rule, a multitude of other landmark decrees were passed. In fact, these were the enactment of laws in practice. A few are recounted below.¹³

- *'The Land Alienation Act'*, which forbade the transfer of agricultural land to the non-agriculturists.
- Agriculturists were granted proprietary ownership rights and immunity from the taxes or levies of Nazrana and Malikana.
- Rural population and peasants without land of their own were allowed and in fact encouraged to dwell on the Khalsa land, and thereafter given ownership rights to those lands.
- The provision of loans for the improvement of agricultural lands, livestock and rural economy with easy procedures and installments was ushered in by his administration.
- The period of the land settlement was increased to forty years.
- He introduced *'The Right of Prior Purchase Act'*, which pre-empted the rights of the rural population in the context of agricultural land sale and purchase.
- The activities of the Agriculture Department, which were initially restricted to Kashmir only, were progressively extended to Jammu and other regions in the North of his State which was the largest single State in India in terms of area.
- The Department of Rural Development was established in 1937, which effectually assured that the *panchayats* were associated with the implementation of plans for rural development. These *panchayats* were previously only engaged in resolving conflicts of the villagers. They now had a welfare function as well. He was deeply inclined towards the welfare of his people particularly the Muslims and initiated plenty of social upliftment measures for them.
- *'The Kahcharai Act'* was a landmark step that removed the discriminative application of the Kahcharai tax. It also granted exemption to the owners of livestock in respect of particular animals of a given number and age. For the improvement of livestock, a large number of bulls of Sindhi and Dhani breeds were distributed among certain peasants on a quantified need basis.
- He made timber available on concessional rates to the people living in the periphery of forests.
- Development in trade and industry sectors got new focuses and numerous taxes were abolished.
- Knowing the employment generated by industrialization, he started manufacturing units of matchboxes, tents, carpets, woodworks, crafts, tannery goods, silk yarn, food etc.
- He was deeply influenced by the Gandhian philosophy of Swadeshi goods being preferred to imported ones and encouraged the purchasing of local products from the local enterprises.

- His administration established a small silk factory in Jammu, with a production unit in Srinagar, which expanded to four times of its original size. Besides providing employment to a large number of workers in the factory, it brought additional revenue to thousands of rural families who raised silkworm cocoons.
- He opened industrial centers and emporiums in Srinagar in 1941 and later at Jammu, to further promote the trade of Kashmiri products.
- Industrial production was also increased significantly during his reign.
- The health and education sector received top priority.
- He made primary and secondary education free for all in the state¹⁴. Primary education was made compulsory for boys in all the municipal towns in 1930.
- Breakthrough schemes for providing educational loans were introduced.
- He felt deeply for the deserving students who could not afford the loans and therefore he set up a 'Scholarship Selection Board' which granted scholarships to the deserving students for higher and technical education in India and abroad.
- New schools, colleges and learning institutes were established to accommodate increasing number of students and as a welfare measure for the Muslim students; he introduced the option of choosing either Urdu medium of study, or the Devnagri or the Persian scripts.
- He simultaneously set up Prince of Wales College in Jammu and S.P. College in Srinagar for higher education of the youth of the State, besides creating a network of other educational and health Institutions
- He launched a massive campaign against adult illiteracy. It achieved considerable success.
- He increased the number of hospitals and medical dispensaries in the State and made sure that there were enough medical staff composed of well-qualified physicians and nursing staff to manage those hospitals and clinics, etc.
- He considered the importance of proper facilities being provided to expectant mothers and established the first ever Maternity Block in Srinagar.
- He opened the 'Maharaja Gulab Singh Hospital' at Jammu, in 1943.
- The 'Maharaja Hari Singh Hospital', one of the then largest hospitals in the Indian sub-continent, with 320 beds, was inaugurated in Srinagar in 1945.
- He gave the State of Jammu and Kashmir the rare distinction of becoming the first State in India to establish a 'Tuberculosis Department'.
- He engaged a special group of medical professionals with expertise in epidemiology, who was assigned the special task of handling epidemic diseases and plagues, as and when they occurred in various regions of State.
- An 'anti-plague plan' was initiated which achieved outstanding success, not to mention the lives saved by the able and diligent administration of Maharaja Hari Singh.

- In 1935, cholera broke out in Kashmir and 1.5 million injections were administered. This was the highest number of cholera medication administered at that time, in any State in India. It was a mammoth task and would not have been possible but for the steadfast support and provision of State funds which was so aptly organized during the governance of Maharaja Hari Singh.
- He was aware that clean water is highly important in good health. He also realized that water was the contributing factor in being vector in case of contagious diseases. He therefore made great efforts to boost the supply of unpolluted and clean drinking water.
- A special branch was created in the PWD, to resolve this particular concern.
- A tube-well was bored in Jammu. New tanks and wells were constructed. Large grants were provided for the improvement of water-supply in Srinagar and other cities of state. There were significant expansion in the water-supply, fire-protection and electric safety works.
- He initiated modern communication services of telegraph, telephone to all the important cities and towns.
- As an infrastructural reform measure, a 'Flood Control Department' was constituted.
- He was anxious to build roads, bridges, tunnels and hydro-power stations to make available to the people the best technological solutions and living standards.
- He was keen to nurture the beauty of the bountiful kingdom and particularly intensified the glory of the Kashmir Valley. He implemented many plans to further the charm of Srinagar and to develop Pahalgam and Gulmarg as ideal hill stations. He launched a plan for the organized development of the area of Kashmir. His labour of love bore rich fruit. The number of tourists who visited Jammu and Kashmir during 1931-32 was 8,604. It rose to 24,659 during 1936-37.
- He gave a huge impetus to the co-operative movement. The number of cooperative credit societies increased to four thousand. Moreover, a large number of societies for the expansion of holdings, better living, education and marketing of agricultural products were also established by him.
- He revolutionized the financial sector by establishing '*The Jammu and Kashmir Bank*' in 1938. Upon his instructions, the Bank took over control of the government treasury. He always believed that the State treasury took precedence over his personal enjoyment. He also wanted to leave as much funds in the State treasury as possible in order to finance his welfare schemes. He lived modestly and expended little, so that his family maintenance would cost the minimum possible.
- Branches of 'The Jammu and Kashmir Bank' were established in Srinagar, Jammu and other cities and towns in the state.
- In 1928, he passed a decree banning child marriage, which was prevalent during those days. Thus, Jammu and Kashmir became one of the earliest princely states of the country to pass such legislation. According to the regulation, the girls were not allowed to marry

before they attain the age of 14 years and boys at the age of 18 years. The violation of this order was declared to be a punishable offense incurring one year's imprisonment or fine up to rupee one thousand or both.

- He opened all public schools, colleges, and wells to the untouchables in 1931.
- In 1932, he opened the doors of temples to Harijans and ensured that people of all sections of society drew water from the same well. He made concerted efforts to abolish the evil of untouchability.
- In 1940, he proclaimed the recognition and custom of untouchability to be a crime.
- He addressed the issue of woman and child trafficking by passing a decree, declaring that organizing a prostitution business was a punishable crime. Encouraging or assisting in seduction or prostitution of minor girls was also declared a crime and subject to punishment.
- During the Second World War, there was a shortage of resources in the State. Food and other commodities had to be rationed. He ensured that there was an adequate supply of wheat and rice and other grain (which form the staple diet of Indian population) at controlled prices. Basic commodities such as sugar and fuel were also rationed.
- He set up a Price Control Department which was assigned the task of fixing reasonable prices and regulating the circulation of essential goods in such a way as to certify equitable distribution.
- He showed enormous interest in the alleviation of the distress of the poorest population. He established a fund towards this end.
- To eradicate the evil of female infanticide, Maharaja Hari Singh constituted two committees in 1926 and 1929, which recommended many effective measures to be implemented. Notable among these were firstly, educating the people and increasing awareness, and secondly, severe action against those guilty of this heinous crime. He accepted and implemented both the recommendations. Furthermore, he established the '*Dhandevi Memorial Fund*' for the marriage of girls.
- He was terribly vexed by the free and uninhibited sale of tobacco to children. He was the torchbearer in the avenue of prevention of child-smoking by promulgating anti-smoking and anti-tobacco ordinances, applicable to children.
- He regarded the stigmatization of Hindu widows to be unjust. He disposed of that social evil by removing the legal disabilities imposed on the remarriage of Hindu widows. This initiative was the first of its kind undertaken by any ruler in the Indian sub-continent.
- Continuing expansion in the representation of the Kashmiri Muslims in the Civil Services became significant as in April, 1932 there were 3,052 Muslim officials, including 55 gazetted ranks, out of a total strength of 8,683. Their number rose to 5070, including 150 gazetted officials, out of 13,790 in April 1945, giving them about 40% representation in the total strength of the State Civil Services.¹⁵

CONCLUSION

After the Privy Purse was negotiated with the Maharaja Sir Hari Singh, the leader of the interim government (Sheikh Abdullah), who was appointed by the Maharaja himself, blatantly flouted the rules of proper governance by refusing to honour the agreement¹⁶. Moreover Sheikh demanded that the Maharaja not even to stay in his own State. The Maharaja forgivingly left the State upon the persuasion of Sardar Patel. It is ironic that Jinnah demanded that the Muslims should have a separate nation since they might be driven out of India by the Hindus, but when a Muslim was nominated head of the crown State of India by his Hindu Maharaja, that Maharaja was himself driven out of his own State by the same Muslim leadership that he had appointed to govern it.

The Maharaja had offered safe passage to about one lakh Muslim refugees from Pathankot to Sialkot, while the Pakistanis murdered in cold blood over 180 out of 220 Kashmir residents being conveyed to Kohala at the Maharaja's request.¹⁷

A country that forgets her history does so at her own peril. The State of J&K bears witness to the fact that all the false claims impugning the attitude of the Maharaja towards his subjects of any religion, were shameless plots for usurping political power. The fact that the State still remains a Muslim majority state bears witness to the same. Had the Muslims been so ill-treated they would have migrated to Pakistan like all the other 7 million Muslims who left and nearly 7 to 8 million Hindus and Muslims who came to India from Pakistan. Even after the partition of the country, India held more Muslims than Pakistan. Moreover Jinnah sought the accession of Hyderabad, Jodhpur, Jaisalmer, Amarkot and so many others, even though all of these were Hindu majority States. In the case of Amarkot, he succeeded. However, after it became a part of Pakistan, the Hindus who did not leave Amarkot were inexplicably non-existent in the years to come. While, after partition, the population of Muslims in India has just kept flourishing and increasing in number, contrary to prophesies of annihilation of the Muslims made by Jinnah. However, the population of Hindus and other non-Muslims who stayed in Pakistan has dwindled very fast and is not causing any international alarm. Possibly, this stems from the fact that since India is a secular State, it ought to adhere to higher standards of benevolence and tolerance which are qualities not even expected from its theocratic fractional nation of Pakistan.

ENDNOTES

1. Buyers, Christopher. *Jammu and Kashmir: Royal and Ruling Houses of Africa, Asia, Oceania and the Americas*. Available at <http://www.royalark.net/India/kashmir3.htm>
2. Ibid.
3. Buyers, Christopher. *Genealogy* (Jammu and Kashmir), March 2001 - June 2011. Available at <http://www.royalark.net/India/kashmir2.htm>
4. http://www.sikhiwiki.org/index.php?title=Maharaja_Ranjit_Singh_liberates_Jammu&oldid=90801". Accessed on 08/08/2014, at 19.13.

5. Wikipedia. Accessed on 9th August, 2014, at 20:09.
6. Treaty between the British Government and the State of Lahore was concluded at Lahore on March 9, 1846.
7. Treaty between the British Government and Maharaja Gulab Singh was concluded at Amritsar, on March 16, 1846.
8. Maharaja Hari Singh, 1895-1961; Hari-Tara Charitable Trust (Jammu, India)
9. Symonds, Richard(2001). *In the Margins of Independence: A Relief Worker in India and Pakistan, 1942-1949*. New York: Oxford University Press.
10. Ibid.
11. Agnihotri, Kuldeep Sing(2012). *Jammu Kashmir ki Ankahi Kahani*. New Delhi: Prabhat Prakashan.
12. This practice of hoisting the State Flag was retained by Sheikh Abdullah. The only change was that the Royal State Flag was replaced by the flag of Abdullah's political party.
13. Dr. Shabir Choudhry's blog. See also unitedkashmirjournal.blogspot.com; En.wikipedia.org/wiki/Hari_Singh
14. www.jkdharmarthtrust.org. Accessed on 09/09/2014. See also Sooden, Surjit Singh. *Jammu under the reign of Maharaja Hari Singh: A study on socio-economic conditions*.
15. Dr. Shabir Choudhry . See also www.vijayvani.com, www.greaterkashmir.com
16. Menon, V. P. (1956). *The Story of The Integration of The Indian States*. New York: Macmillan.
17. See text of the telegram dated October 18, 1947 from the Prime Minister of Kashmir to the Governor-General of Pakistan. Available in Deora, M. S. and Grover, R. (1991). *Documents on Kashmir Problem*, 19 Vols. New Delhi: Discovery Publishing House.

STRATEGIC MINERAL RESOURCES AMONG IBSA COUNTRIES: PARTNERSHIP AND CHALLENGES

Gayettri Dixit*

ABSTRACT

This paper attempt critical analysis of Strategic minerals with the specific reference to India, Brazil and South Africa. It also aims to highlight the huge potential of IBSA cooperation in strategic minerals and the energy sector. IBSA countries have intensified their defence industry collaboration with each member of the triangle to develop some state of the art defence technologies and products. In this paper, the role of India-Brazil-South Africa (IBSA) Dialogue Forum will be analysed from the perspective of their mineral and energy policy.

Keywords: Defence Resources, Energy Resources, IBSA, Industry Resource, Strategic Mineral Resources.

INTRODUCTION

Human progress throughout the ages involves his mastery over mineral resources and their efficient use. The uses of minerals have undergone a major transformation in the last few decades. The emergence of cutting-edge technology every fortnight has further led to a stress build-up on the stockpile of global mineral resources. The political turmoil of the first decade of the 21st century has been marked with civil disturbances, local unrest and inter-state anxieties. Such exigencies create a pull-effect on the mineral resources of the world. In recent time, concern on possible scarcity of natural resources has mounted. The essential concerns have mostly remained the same in the past decades, focusing on the potential impact of accidental or intentional supply disruptions to the economy as far as its dependency upon certain imported materials is concerned. The continuous strife in different parts of the world has led to the exhaustion of minerals and metals used up in munitions and destructive operations. The magnitude is so great that several minerals and metals have reached almost exhaustion point.

*Gayettri Dixit has been awarded Ph.D. by the Centre for African Studies, JNU for her thesis, 'Challenges to South Africa, India, Brazil Partnership in Strategic Mineral Resources'. Her M. Phil. research was on 'Geographical Importance and Interest of South Africa in Southern African Development Community' at the same centre. She has done Masters in Geography as well as in Economics.

Mineral resources in respect of specific raw materials have fluctuated significantly with market circumstances. Moreover, the sets of raw materials thought by certain countries to be critical have changed over time. In this paper, we are going to examine the current strategic minerals. The Strategic minerals are usually defined as those minerals that are paramount to the national security of a country but have to be obtained largely or entirely from foreign sources because the supplies available within the country concerned would not be adequate in a time of national emergency (Saxena, 2001:315).

The varieties of minerals that are essential for defence, aerospace industry, energy supplies and transport have at particular times, been listed as of strategic importance. During the Second World War, chromium and tin-bearing minerals, quartz crystals and sheet mica were among the minerals placed in this category. A.A. Archer (1981) from the Institute of Geological Sciences in London has stated that “some minerals are more important, vital, essential or critical than others because they make a demonstratively greater contribution to the national well-being, so that interruption or cessation of supplies, from whatever source, would have greater consequences.” This ‘criticality’ or ‘strategic’ implication of minerals is directly related to their use (Rae Weston, 1984). The three guiding principles of this concept are: (i) Essential use for national defence, (ii) Essential use for industry and civilian, and (iii) Lack of suitable substitutes. Butt and Thomas (1986) explain that the Strategic minerals are those minerals considered to be essential to critical civilian and military needs in quantities not available from domestic sources or secure foreign sources and for which short-term substitute are not available. From this definition, one may readily observe that time may alter which minerals are considered strategic. The technological breakthrough in composites or ceramics research may provide an acceptable substitute for cobalt in Jet turbine blades and other critical uses, thereby, removing the mineral from the list of strategic minerals. Discoveries of new deposits of strategic minerals in insecure areas of the globe may have a similar effect. Strategic minerals are necessary across the spectrum of modern technology, from electronics and electrical systems applications, aerospace and defence and the conventional energy industry. Many of the uses overlap and converge in the field of alternative or “green” energy.

Critical and strategic minerals are used in both traditional energy technologies and in emerging technologies. Energy conservation and technologies that enable lower energy use are dependent on critical minerals. Two rare earth elements – Praseodymium and Samarium, along with Scandium, are used in forms of high intensity lighting. Light emitting diodes or LEDs, represent a promising new technology for saving energy (Geological Survey, Colorado). Most of the literature on minerals treats strategic and critical materials more or less synonymously, for the sake of clarity they are not separated in this study. It is evident that ‘critical’ minerals are those that are vital for the defence and industry of a country; however, a ‘strategic’ mineral implies that its supply is from a foreign or insecure source (Van Rensburg, 1986: 72). The Strategic and Critical Material Stockpiling Revision Act of 1979 in US mentions, “A common definition of a strategic mineral is a mineral that would be needed to supply the military, industrial and essential civilian needs of the United States during a national emergency” (in Office of Technology Assessment, 1985). This paper uses the terminology ‘Strategic Mineral’ and ‘Critical Mineral’ interchangeably.

Identification of Strategic Mineral Resources

The key strategic minerals were identified using the following criteria: a) Criticality, (b) import dependence, (c) concentration of sources and (d) technological, geopolitical and other related factors (Anderson, 1998: 53). The strategic concept of minerals has to consider several factors, some of which are listed below:

Essential use for national defence: Without these materials, the nation's capacity to defend itself could be seriously jeopardised.

Essential use for Industry: The use of these materials must fill such an important need that without these, industries, which are backbone of the national economy and its military production, will get crippled (Office of Technology Assessment, 1985: 46). Adolph Knoph (1946: 7) classified minerals in three categories: "(1) *Strategic minerals*, which are necessary but cannot be produced within our own country no matter how great the price stimulation; (2) *critical minerals*, which are necessary and can be produced by price stimulation; and (3) *critical minerals*, which are necessary and of which we have an ample supply".

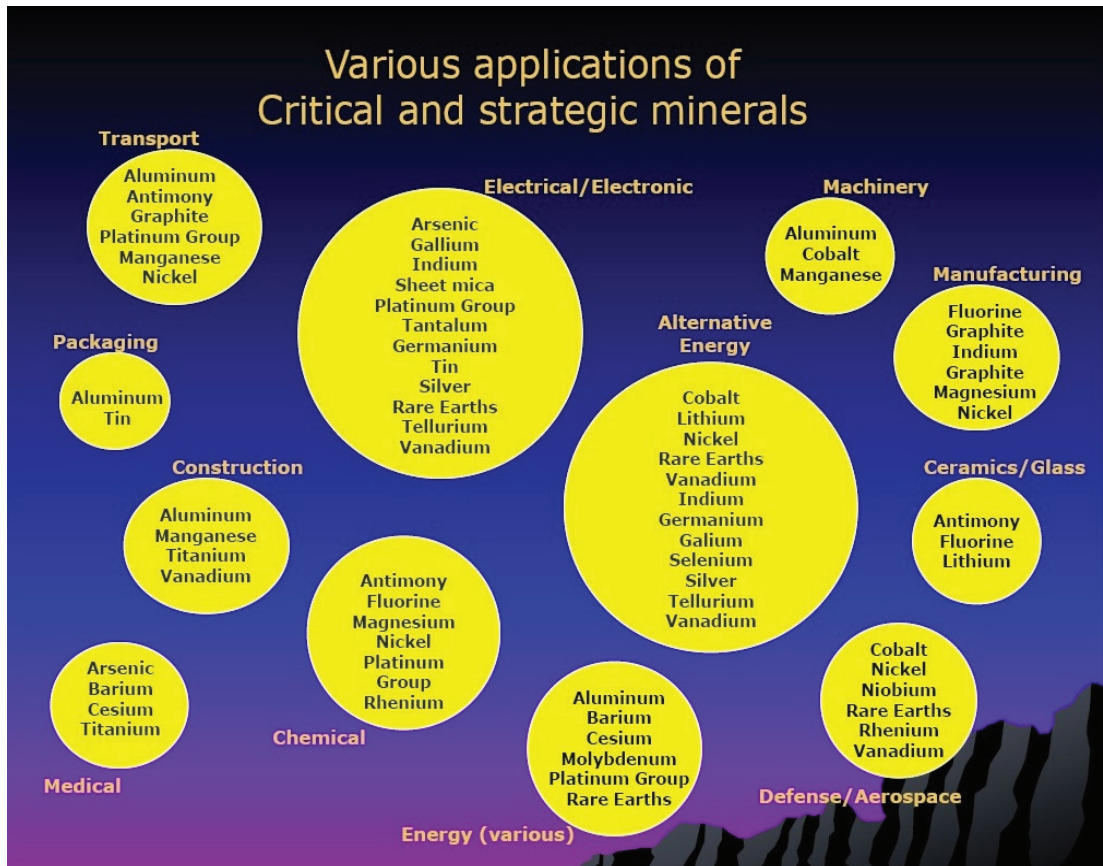


Figure 1: Applications of Critical and Strategic Minerals

Most strategic minerals are chosen in terms of their current and future relevance to the defence planning. Within the defence and aerospace industries many lesser known mineral commodities are important. A number of metals are needed for military equipment, both aircraft and ground based equipment. Vanadium, Rhenium, Cobalt, Nickel and Niobium are all important for special alloys. Various electronic devices for air traffic control, satellite communications and lasers require Neodymium, Samarium, Cobalt, Yttrium, Terbium, Europium, Erbium and others. Because of the need for sophisticated electronics in military applications, all of these materials needed for electronics are also required in aerospace/defence fields.

This paper focuses on three countries namely India-Brazil-South Africa (IBSA). IBSA dialogue forum is a coalition of emerging powers established in the aftermath of global power shifts. Historically, these similarities are rooted in their common experience of colonialism or imperialism and the social and economic inequalities that came with it and got accentuated over time. They also share the status of emerging powers of the South given their growing economic importance and the central role played by their diplomacies in multilateral negotiations.

History of India- Brazil -South Africa (IBSA)

The development of the trilateral India–Brazil–South Africa (IBSA) Forum after the failure of multilateral trade negotiations at Cancun in 2003 represents the emergence of three powerful economies as major stakeholders in the process of globalisation and a common desire to create an institutional framework for South–South co-operation. As the economic leaders of their respective regions, the three IBSA countries also represent the larger interests of Sub-Saharan Africa (SSA), South America and Southern Asia. This is especially true of Brazil and South Africa, being the most significant economies within Common Market of the South (MERCOSUR) and Southern African Customs Union (SACU), the regional trade agreements that brings together the Southern Latin American and Southern African nations, respectively. While India is the most important economy in Southern Asia, its institutionalised economic linkages within South Asia is still at a developmental stage as India negotiates FTAs with Association of South East Asian Nations (ASEAN) member states and seeks a more ambitious trade liberalisation agenda for the South Asian Free Trade Area (SAFTA). On 6th June 2003, the Foreign Ministers of India, Brazil and South Africa met in Brasilia to set up the India-Brazil-South Africa Dialogue Forum (IBSA) after informal talks between their respective head of state during the G-8 meeting in Evian, France on the basis of shared characteristics of these three semi-peripheral powers. President Thabo Mbeki of South Africa, Lula da Silva of Brazil and Prime Minister Atal Bihari Vajpayee of India formally launched IBSA during the UN General Assembly in September 2003. The leaders of the three states have consciously advanced themselves as campaigners for an emerging developing world.. The IBSA Trilateral Commission was constituted in the aftermath of their participation in the G8 summit of 2003. It aimed to formalize relations and provide a forum for coordinating strategy between these leading industrial countries of the South (www.ibsa-trilateral.org, 2003 and Taylor, 2010: 86). The IBSA initiative should be seen as an endeavour to intensify the global bargaining power by three pivotal states. Prior to initiating the IBSA dialogue forum, there had been negotiations for

trade agreements between MERCOSUR¹ and SACU² as a means toward establishing a future free-trade agreement for some time, as well as a preferential trading deal between India and Mercosur on reducing tariffs on selected products in bilateral trade, that concluded in January 2004. Thus, the establishment of the IBSA is a step forward in cementing the already existing economic relations between the three states. The growing significance of IBSA cooperation in the international trade is reflected in the increasing share of these three countries in world merchandise trade.

In the emerging global scenario, energy security is the main focus of any bilateral or multilateral organisation. Therefore, the working group of IBSA also aims to promote clean and efficient sources of energy such as bio-fuels. It also gives an opportunity to exchange information about renewable energy and use of non-conventional energy sources which is essential to fulfil their future energy requirements. This concern is also visualised in the recently concluded IBSA summit held in Brasilia on April 15, 2010. The energy sector is significant in all three countries. Among the three countries, Brazil is the only one, which has acquired self-sufficiency in oil in 2006, even though none have sustainable reserves for the long-run. All three countries are emerging powers and are ambitious in their energy policies. Moreover, South Africa, India and Brazil have committed to develop and employ alternative sources of energy.

Trade of Strategic Minerals among IBSA members

The focus area of the paper is trade of strategic mineral resources among three countries. The growing domination of the North over the South in the use of strategic minerals lies at the heart of the conflict. All the three IBSA countries are blessed with major endowments of mineral resources and have historically well developed mining and metallurgy industries. IBSA stakeholders in the mining sector have been witnessing an increase of their global profile and clout in the current years and have not been averse to global acquisitions to expand their production portfolio.

South Africa dominates the production and export of *PGMs*, including platinum, palladium and iridium as well as rhodium and ruthenium. PGMs have a number of unique properties, such as resistance to high temperatures and ability to catalyze chemical reactions, which make them irreplaceable in a wide range of applications. High global demand for platinum is driven by two main uses: automotive catalytic convertors, which convert harmful emissions into relatively inert exhaust and jewellery. Iridium is used in petroleum and automobiles. Rhodium, ruthenium and other less common PGMs are experiencing production and supply problems; as these are difficult to extract and refine and are less prevalent. Ruthenium and iridium are in high demand because they provide vertical memory storage for hard drives and lighting. Currently, there are no problems with the supply of platinum and palladium and the market is functioning well; recycling and below ground reserves guarantee continuing supply. World platinum suppliers, dominated by South Africa, struggle to satisfy global demand for a metal that is virtually irreplaceable in several catalytic and industrial applications. South Africa's Bushveld Complex contains some 75 percent of world platinum reserves, occurring together

with other PGMs and other valuable minerals such as cobalt. Mining in the Bushveld Complex accounts for about 80 percent of world supply. South Africa, in addition, can also emerge as a major supplier of Chromium and Vanadium.

Mineral Policy

Today most of the states have clear mineral policy. Countries like India, South Africa and Brazil are the fastest growing economy in the world with GDP increasing at the rate of 8–9 percent per year and this block has great potential of natural resources. To maintain the requisite availability of strategic mineral for national security is one of the main components of making of their foreign and domestic policy. Country like India has crucial role in South Asia and suffer from acute security deficit syndrome vis-à-vis Pakistan and China. South Asia also affects rest of the African countries and Brazil has few problems but India needs rare strategic minerals for purpose of defence. As such, policy makers are keeping in mind the availability of strategic minerals resources in the region. IBSA countries sign MoUs on minerals policy, distribution and export-import policy within member states and assure that they will not provide these crucial minerals to countries like Pakistan and China. But China is the main contender of India in Africa and Asia region. IBSA countries organise regular meetings to explore comprehensive policy on strategic minerals.

Cooperation in Strategic Mineral Resource among IBSA members states

The success of the trilateral cooperation between the countries of South Africa, India and Brazil will solely depend on their commitment to forge ahead in keeping with their complementarities. All the three nations are highly cohesive in terms of their political structure and share an imperial–colonial past, which have defined their societal foundations in many parallel ways in the political, economic and social spheres. All the three countries have extensive belts of energy and mineral reserves that are untapped or under-utilised. A thorough understanding of their complementarities with respect to each other's strengths and weakness will help to further elucidate the ample opportunities staring at their face, which calls for greater policy initiative and higher actualisation rate.

As the three countries enjoy considerable advantages in Strategic Mineral Resources (SMR), the expertise so gained can be mutually advantageous for them in the long run. The idea, here, is to develop each individual country as a regional hub for SMR. India, Brazil and South Africa should cooperate with each other in this process of transforming their market as the global hub for SMR exports across the globe. For these, the three countries need to enhance their inter-regional connectivity, especially maritime transportation links. Godfrey Oliphant (2012), Deputy Minister for Mineral Resources, South Africa has emphasised on the 'historical links' among the IBSA nations in benefitting from the comparative advantages in exploration of the SMRs. He said,

“There is need to increase the level of beneficiation of strategic minerals in a way that will align those efforts without industrial development and economic growth

imperatives. It is also intention of the beneficiation strategy to contribute to the development of another key jobs driver through New Growth Path, the knowledge economy, through increased R&D and innovation and development of competitive advantages as linked to priority value chains. These chains are iron ore and steel, energy commodities, autocatalytic converters and diesel particulates, titanium and jewellery. While we have completed the first two, we are in the process of finishing the last three. The department is also engaged in review of Minerals and Petroleum Resources Development Act (MPRDA). This is aimed at improving the current construct of the Act to remove ambiguities, make provisions for consultation processes and streamline licensing process.” (Oliphant: 2012)

He further said, “All minerals will be accessible for foreign investors. We have also identified some strategic minerals such as those which are energy minerals, platinum group minerals, and manganese and chrome ore. Our resource-based comparative advantage can be transformed into a national competitive advantage.”

Among IBSA countries, Brazil is the largest country in land area. It is the fifth largest country in the world in terms of geographical area. Brazil has the sixth largest economy in the world in terms of nominal GDP. With 8,870 mining companies operating in the country in 2011, it is one of the largest mineral producing countries in the world. In 2006, Brazil produced 46 industrial minerals, 22 metals and 4 fuel minerals and exported them to the global marketplace. The produced minerals were bauxite, copper, coal, chromite, gemstones, gold, iron ore, kaolin, manganese, niobium (columbium), tantalum and tin from large deposits. Brazil’s reportedly large mineral reserves and other identified resources help make it one of the most dynamic markets in the world. As per Mineral Trade data for the year 2011, Brazil’s exports and imports in minerals were around US\$ 236 billion and US\$ 209 billion, respectively. The mineral trade in the country contributes significantly to the country’s trade balance.

South Africa is a world leader in mining. The country is famous for its abundance of mineral resources, accounting for a significant proportion of world production and reserves, and South African mining companies are key players in the global industry. South Africa’s total reserves remain some of the world’s most valuable, with an estimated worth of R 20.3-trillion (\$2.5-trillion). Overall, the country is estimated to have the world’s fifth-largest mining sector in terms of GDP value. It has the world’s largest reserves of manganese and platinum group metals (PGMs), according to the US Geological Survey, and among the largest reserves of gold, diamonds, chromite ore and vanadium. With South Africa’s economy built on gold and diamond mining, the sector is an important foreign exchange earner, with gold accounting for more than one-third of exports. In 2009, the country’s diamond industry was the fourth largest in the world. South Africa is also a major producer of coal, manganese and chrome. There is considerable potential for the discovery of other world-class deposits in areas yet to be exhaustively explored. South Africa’s prolific mineral reserves include precious metals and minerals, energy minerals, non-ferrous metals and minerals, ferrous minerals, and industrial minerals. Given its history and mineral wealth, it is no surprise that the country’s mining companies are key players in the global industry. Its strengths include a high level of technical and production expertise, and comprehensive research and development activities.

India is the second largest populous country in the world. With the 10th largest economy in the world in terms of nominal GDP and third largest in terms of Purchasing Power Parity (PPP), it is one of the fastest emerging economies in the world. Ajey Lele and Parveen Bhardwaj (2014) mentions that to sustain such an economy, the industrial and manufacturing industry plays an indispensable role; moreover, minerals play a vital role in sustaining this strategic industry. With its diverse geographical attributes, the country is endowed with significant mineral resources. Mining sector is an important segment of the Indian economy. Mining contributed about US\$ 45 billion which was 2.63 per cent of the country's GDP in 2011. India produces as many as 87 minerals, which include 4 fuel, 10 metallic, 47 non-metallic, 3 atomic and 23 minor minerals (including building and other materials). India also contributes significantly towards minerals such as barite, bauxite, chromium, coal, iron ore, limestone and manganese ore in terms of output, which was among the 10th largest in the world. In 2011, the Indian mining industry contributed about 2.63 per cent to the GDP which is one of the lowest vis-à-vis some of the larger emerging economies such as China (20 per cent), Australia (8 per cent) and Russia (14.7 per cent). However, this percentage is expected to increase between 7 per cent and 8 per cent in the near future due to increasing demand. The total number of mines in 2011-12 was estimated to be around 3,236 mainly dominated by larger number of small operational mines. The public sector companies account for 66.5 per cent of the total value of mineral production. The open cast mining is the main practice for mining in India accounting 80 per cent of the total mining. During 2011-12, estimated value for fuel minerals accounted for US\$ 28.69 billion or 68.22 per cent; metallic minerals, US\$ 8.39 billion or 19.94 per cent of the total value and non-metallic minerals including minor minerals US\$ 4.97 billion or 11.83 per cent of the total value. While India remains self-sufficient with regard to most of the minerals, there are a few minerals whose resources are limited and may not be sufficient to meet the domestic demand in the future. These minerals are the backbone of strategic industries like defence, space, nuclear, energy, etc. Hence, the availability of these minerals in the future to meet the domestic demand of strategic industries is crucial.

Demand and Applications of Strategic Mineral Resources

The demand for strategic mineral resources is derived from the production of their end use products, such as flat panel displays, automobiles, catalysts, etc. As a result, demand for strategic mineral resources depends on the strength of the demand for final products in which they are inputs. The rare minerals used for defence purposes are primarily found in two types of commercially available permanent magnet materials. They are Samarium -cobalt (SmCo) and Neodymium- iron -boron (NdFeB). NdFeB magnets are considered the world's strongest permanent magnets and are essential to many military weapons systems. SmCo retains its magnetic strength at elevated temperatures and is ideal for military technologies such as precision-guided missiles, smart bombs and aircraft. The superior strength of NdFeB allows for the use of smaller and lighter magnets in defence weapon systems. The permanent magnets containing neodymium, gadolinium, dysprosium and terbium are also used in numerous electrical and electronic components and generators for wind turbines. With the exception of

small amounts of yttrium, rare earths have yet to be included in the strategic minerals stockpile for national defence purposes.

Generally, the strategic minerals have been associated with national security purposes. The strategic importance of minerals is a function of its importance in defence applications, the extent to which defence actions are required to shape and sustain the market and the impact and likelihood of supply disruption. Many scientific organisations in the South Africa, India and Brazil have concluded that certain rare earth metals are critical to their national security and becoming increasingly more important in defence applications. Some experts are concerned that IBSA states are not doing enough to mitigate the possible risk posed by a scarcity of domestic suppliers. However, it appears that IBSA's position assumes that there are a sufficient number of supplier countries worldwide to alleviate the potential for shortages.

Challenges in Partnership

Although all three countries have historical and cultural relations but in a globalised world number of challenges has emerged. China is the big player in international market for its rapid economic growth. China entered in Africa very diplomatically and established good relation with many African countries. IBSA is cooperating to strengthen bilateral and trilateral relations as well among IBSA countries to counter emerging threat from China. Another challenge is the geographical discongruence between member states. India, Brazil and South Africa are situated in different continent; distance is the biggest challenge in trade-cooperation. Maritime transport is the only way for the transportation of goods. They are searching new ways to reduce distance.

Figure 3: Voyage Time among IBSA member states

Liner Services in IBSA	India-South Africa	South Africa- Brazil	Brazil-India
Average Voyage Time	16-18 Days	9-12 Days	None exist
Frequency	1 per Week	1 per Week	NA

(Source: Jayanta Roy and Banerjee, 2008: 34)

It is clear that the liner connectivity, time taken and the frequency of such connection are far below global standards. There are no direct lines between South Africa and India, despite both being part of the Indian Ocean connection. Containers travelling between India and South Africa need to be trans-shipped to Dubai, Oman, Singapore or Mauritius. Average voyage time of over two weeks for the relatively short distance between India and South Africa and the frequency of only one departure per week; highlight the poor connectivity between the two countries. Dedicated connections between India and Brazil do not exist and is dependent on any available routes from trans-shipment points in the West Asia (Dubai etc.) or through South-East Asia (Singapore). Added to such a woefully inadequate logistical connection is the

fact that the overall picture of trade facilitation, logistical efficiency and transportation costs for all three IBSA countries is below the OECD averages and is in need of serious reforms. The lack of inter-IBSA transport linkage issue is partly related to the lack of substantive trade-flows between the three countries. (Roy and Banerjee, 2008: 34-35).

IBSA countries are also regional hubs and they are not ready to lose their leverage in their respective region. Thus, regionalism factor is a big challenge, in fully utilizing cooperation within IBSA.

CONCLUSION

The IBSA countries are large, diverse and rapidly growing economies. Their future position in the global milieu of production is assured by their relatively young populations and their prudent investment over the years in higher education and skill accumulation. Furthermore, all the three countries are blessed with a rich endowment of natural resources. The three IBSA countries have a lot to contribute to each other's economies to augment this process of internationalization. However, current levels of inter-IBSA economic linkages, though it has been rapidly growing in recent times, are still far from optimal. Since a key challenge facing IBSA is how to overcome the physical, cultural and economic distance between its members, it would be imperative to simultaneously seek to bridge these three gaps. The significant progress achieved in bridging the economic distance so far shows that cultural and physical distances can be overcome if there is sufficient economic attraction and vice versa. To deal with the magnification of transport and other transaction costs due to the effects of remoteness, the steps that IBSA has already undertaken to address transport issues including for establishing air and maritime corridors between the three countries would need to be implemented urgently.

The success of IBSA, the definitive trilateral cooperation of the three pivotal 'Southern' states depend on the willingness of the governments of these countries, which have the capacity and capability to build regional institutions, to find an effective mechanism to challenge the existing system of the international regimes and to transform themselves into pillars of a just multipolar world. This depends on their willingness to walk the talk and give concrete shape to their benevolent ideals. Then let time to be a judge of that.

ENDNOTES

1. The Mercado Común del Sur (Mercosur) includes Argentina, Brazil, Paraguay and Uruguay as full members; Venezuela's full membership still has to be approved by the Mercosur member's parliaments. Bolivia, Chile and Peru are associated member states.
2. Southern African Customs Union (SACU) is the oldest existing customs union in the world, was established in 1910. It includes five countries of Southern Africa: The Governments of the Republic of Botswana, Kingdom of Lesotho, Republic of Namibia, Republic of South Africa and Kingdom of Swaziland.

REFERENCES

1. Alden, Chris and Vieira, Marco Antonio (2005). The New Diplomacy of the South: South Africa, Brazil, India and trilateralism, *Third World Quarterly*, **26**(7): 1077-1095.
2. Anderson, W. Ewan and Liam D. Anderson (1998). "Strategic Minerals: Resource Geopolitics and Global Geo-Economics". London: Wiley Publication.
3. Archer, A.A., (1981). *Trans. Instn Min. Metall*, **90A**, 1-6.
4. Butts, Kent Hughes and Paul R. Thomas (1986). "*The geopolitics of Southern Africa: South Africa as Regional Superpower*". London: Westview Press.
5. Chatterjee, Bipul and Dhoot, Swati (2006). Economic Co-operation between India-Brazil-South Africa: The Road ahead, *Synopsis*, **8**(2): 24-28.
6. Cooper, Andrew F. & Higgott, Richard A. and Nossal, Richard K. (1993). *Relocating Middle Powers: Australia and Canada in a Changing World Order*. Vancouver: University of British Columbia Press.
7. Cooper, Andrew F. (1997). A Conceptual Overview, in Cooper, Andrew F. (1997). *Niche Diplomacy. Middle Powers after the Cold War*. London: Macmillan, pp. 1-24.
8. Government of India (2004). *Report of the Trilateral (India-Brazil-South Africa) Commission Meeting*. IBSA Dialogue Forum, March 4-5, 2004, New Delhi.
9. Hveem, Helge (1986). 'Minerals as a factor in strategic policy and action', in Arthur R H. Westin G (Ed.). *Global Resources and International Conflict Environmental Factors in Strategic Policy and Action*. New York: Oxford University Press.
10. Knoph, Adolph (1946). 'Strategic mineral supplies', *Science Monthly*, **62**:5-14.
11. Lele, Ajey and Bhardwaj, Parveen (2014). '*Strategic Materials: A Resource Challenge for India*'. New Delhi: Pentagon Press and Institute for Defence Studies and Analyses, p. 80.
12. Ministry of Mines (2012). Annual Report 2011-12. Also available at [http://\(mines.nic.in/writereaddata/Contentlinks/1ed4a15b370646d7be2c6defb2ecf6c9.pdf](http://(mines.nic.in/writereaddata/Contentlinks/1ed4a15b370646d7be2c6defb2ecf6c9.pdf)
13. Mutambara, Tsitsi Effie (2010). *Examining South-South Trade Flows and Market Access Conditions: A Case Study of the India, Brazil and South Africa Development Initiative*, TIPS Data Notes and Reports.
14. Puri, Lakshmi (2007). "IBSA: An Emerging Trinity in the New Geography of International Trade", Policy Issues In International Trade and Commodities, *UNCTAD Study Series No. 35*, United Nations.
15. Roy, Dr. Jayanta and Pritam Banerjee (2008), 'IBSA: Redefining South-South Co-operation', *CII Newsletter*. Also available at http://newsletters.cii.in/Newsletters/mailler/LAC_Newsletter/october/Country%20Reports/ReportJuly09India-LatinAmericaandCaribbeanEconomic.pdf
16. Saxena, S. C. (2001). "*Africa: Economic and Strategic Issues*". New Delhi: Kalinga Publications.

17. Taylor, Ian (2005). 'South Africa: Beyond the Impasse in Global Governance', in John English, Ramesh Thakur, and Andrew F. Cooper (eds.), *Reforming from the Top: A Leaders' 20 Summit*. Tokyo: United Nations University Press, pp. 236-242.
18. Van Rensburg, W. C. J. & Anaejionu, Paul. (1986). 'Strategic minerals'. N.J: Prentice-Hall. Englewood Cliffs
19. Weston, Rae (1984). *Strategic Materials: A World Survey*, Croom Helm Publication.

STUDY OF VARIOUS IMAGE ENHANCEMENT TECHNIQUES : A CRITICAL REVIEW

Jasbir Singh Lamba*

Prof Rajiv Kapoor**

ABSTRACT

The aim of image enhancement is to improve the visual appearance and quality of an image. Many images like medical images, satellite images, aerial images, images obtained from digital camera and even real life photographs suffer from poor contrast and noise. It is necessary to enhance the contrast and remove the noise to increase image quality and to retrieve hidden information in the image. A digital image is an aggregate of large number of picture elements which represents the brightness of different pixels. Our aim is to study various techniques used for the enhancement of images. In this paper, we present an overview of image enhancement processing techniques in spatial domain and frequency domain. More specifically, we analyze different image processing techniques.

Keywords: Digital camera, Digital image, Frequency domain enhancement, Histogram Equalization, Image Enhancement, Spatial domain enhancement.

INTRODUCTION

The purpose of image enhancement is to produce a high quality image from a low quality raw image. For this, we have to use some image enhancement techniques which can bring about the desirable transformations in the given image. The survey of image enhancement techniques imply two broad classes of techniques: (1) Spatial domain transformation techniques; and (2) Frequency domain transformation techniques. Spatial transformation techniques operate directly on the picture elements. We can have global & local transformation techniques. In global techniques, we generate some transformation functions which operate on all the pixels at the same time. In local transformation, we take each element one-by-one and operate a suitable spatial filter on these pixels and continue this process for all the pixels. We can produce some specific effects on the image like revealing its finer details. Image is captured by different

***Jasbir Singh Lamba** is a Research Scholar, Mewar University, Gangrar, Chittorgarh, Rajasthan, India.
E-mail: jasbirlamba@yahoo.com

****Prof Rajiv Kapoor** is the Ex- HOD of ECE Department at Delhi Technological University, Delhi-110042.
He is well known in the field of Image Processing.

equipments like a digital camera, mobile phone, astronomical telescope, X- rays etc. This image is converted to digital form by sampling, quantization & A/D conversion. In this image, we have large number of picture elements in a frame (picture plain), which may be a square or rectangle of different aspect ratio. Each picture element in the image has some specific value of brightness or light intensity and such an image may be represented by an array of elements of dimension $m \times n$ and each element has some value of light intensity represented by a 8 bit or 16 bit register in gray scale and by 24 or 48 bits data for coloured image. Each colour i.e. red, green and blue color is represented by a 8 bit data register. In colored image we can produce very large number of colors by the vector addition of these primary colors.

1.1 Image Capturing

A digital image is an image obtained through certain sensors which are light- sensitive like Charge Coupled Devices (CCD's) or CMOS devices and which are used normally in digital cameras. Digital images, obtained by digital camera, is an aggregate of different picture elements which are present in a rectangular or square frames, which are represented by a matrix or an array of size $M \times N$ where M & N are the number of pixels along X & Y directions and these are the dimensions of light -sensitive sensors in the camera which carry small cells. These cells are sensitive to light intensity. When light falls on these cells, displacement of charge takes place and develops some voltage in proportion to light intensity falling on the cells. This voltage is converted to digital form through A/D convertor. The voltage is stored in the form of 8 bit word and saved in the memory of digital camera for a gray scale image. The number of gray levels in a 8 bit picture element are 256 which have values from 0 to 255, while for a colored image, we need 24 bits for the representation of picture elements . Each 8 bits represents red, green and blue colors which are the primary colors. We can generate very large number of colors by the combinations of these primary colors

1.2 Processing of the digital image

When we capture any image, the image may have some drawbacks due to various reasons like insufficient light while capturing image by a digital camera, unfavorable weather conditions like fog, rain or, too large sunlight condition. Due to these adverse conditions, the quality of the image taken by a camera may be poor but the quality can be improved by using some specific techniques for image enhancement.

Broadly speaking these techniques can be divided into two categories:-

1. Spatial Domain Transformation Techniques
2. Frequency Domain Transformation Techniques

1.3 Spatial Transformation Techniques

In spatial transformation, we operate directly on pixels. We can have different types of spatial transformation techniques as given below:-

- 1.31 Contrast Stretching
- 1.32 Negative image or complimentary image transformation
- 1.33 Log and power law transformation (Non-linear transformations)

1.34 Linear and Piecewise-Linear Transformations

1.35 Gama correction

1.36 Histogram Processing

1.37 Spatial filtering for smoothing of image involving convolutional techniques

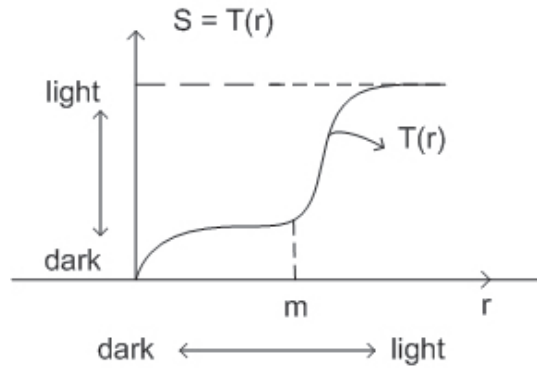


Figure 1: Transformation curve for gray level

1.4 Contrast Stretching: Contrast stretching (often called normalization) is a simple image enhancement technique that attempts to improve the contrast in an image by 'stretching' the range of intensity values. For an 8 bit image, there are 256 gray levels. Level 0 or close to zero represent dark portion of the image and gray level 255 or close to it represents the bright portion of the image. The difference between maximum and minimum values of gray levels is called its dynamic range. If this dynamic range is confined to a narrow range, the contrast of the image would be low. As a result, the quality of the image would be poor and we need to increase the dynamic range. We can apply a *linear scaling function* to the image pixel values. So, contrast stretching is a simple image enhancement technique that attempts to improve the contrast in an image by 'stretching' the range of intensity values..

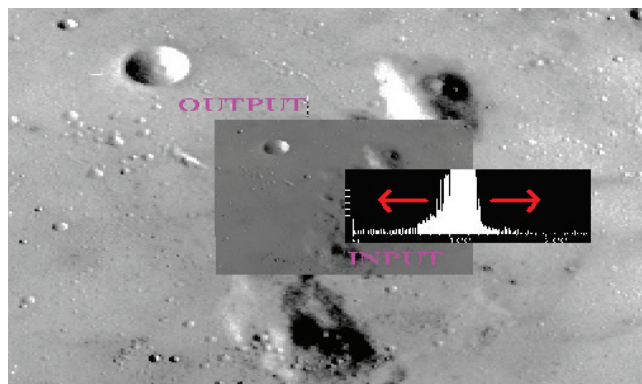


Figure 2: Contrast stretching for histogram spreading

Before the stretching can be performed, it is necessary to specify the upper and lower pixel value limits over which the image is to be normalized. For example, for 8-bit gray level images, the maximum and minimum values of gray levels would be 0 and 255. But in the actual given image, let the lower and the upper limits, up to which we want to extend the contrast be say , a and b respectively.

The simplest sort of normalization then scans the image to find the lowest and highest pixel values currently present in the image. Let us call these values as c and d . Then each pixel P is

$$P_{out} = (P_{in} - c) \left(\frac{b - a}{d - c} \right) + a$$

Where P_{in} are the input pixel values and P_{out} are the output pixel values. Values below 0 are set to 0 and values above 255 are set to 255. Putting the values of P_{in} in the relation (1) we can calculate the values of P_{out} and achieve the objective of contrast extension. It is a linear extension .

1.5 Negative image : Sometimes negative images are required in medical investigations. These can be obtained by using the transformation $s = [(L-1) - r]$, where the level is in the range $[0, L-1]$. It can be seen that every pixel value from the original image is subtracted from the figure 255. The resultant image becomes negative of the original image. Negative images are useful for enhancing white or detail embedded in dark regions of an image.



Figure 3: A negative image of a man

1.6 Image Thresholding: Another technique is Image thresholding transformation in which we have only two values of pixels. These can be termed binary transformation as pixel values of thresh-hold images are either 0's or 1's . Such an image can also be called as black & white image and have only 2 gray levels i.e 0 or 255. For converting a gray level image to a black and white image, we need to change all gray levels below the threshold value to 0 and all the gray levels above the threshold value to 255.

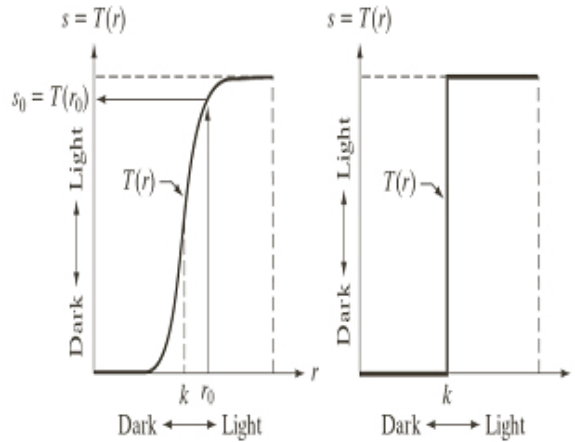


Figure 4: (a) Nonlinear-stretching (b) Image thresholding

1.7 Linear and Nonlinear Transformations: We can have some linear and non-linear transformations in image processing like log transformations ,power transformations ,anti-log transformations n^{th} root transformations These are shown in Figure below. We can adjust the transformation variables according to our requirement so as to get a good quality image.

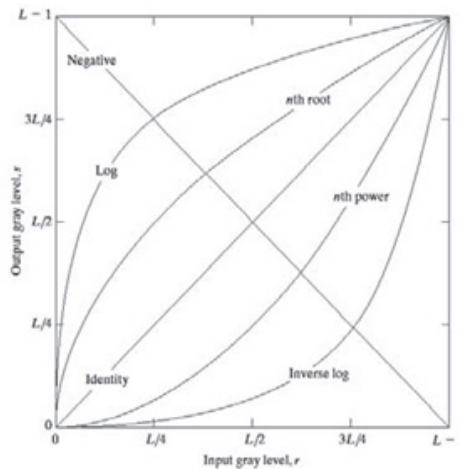


Figure 5: Gama correction curves Non-linear curves & Negative image transformation curve

1.8 Logarithmic Transformations: The general form of the log transformation is $s = c * \log (1 + r)$. Log functions are particularly useful when the input gray level values have an extremely large range of values and due to which some portion of the image is washed out,

so dynamic range can be compressed as per our requirement. On the other hand, when the dynamic range is limited, it can be enlarged through anti-log transformation.

1.9 Powers-Law Transformations & Gama corrections: The n th power and n th root curves are shown in Figure5 . It is given by the expression, $s = cr^r$ where c and r are the positive constants. This transformation function is also called as *gamma* correction. For various values of γ , different levels of enhancements can be obtained. This technique is commonly called as *Gamma Correction*.

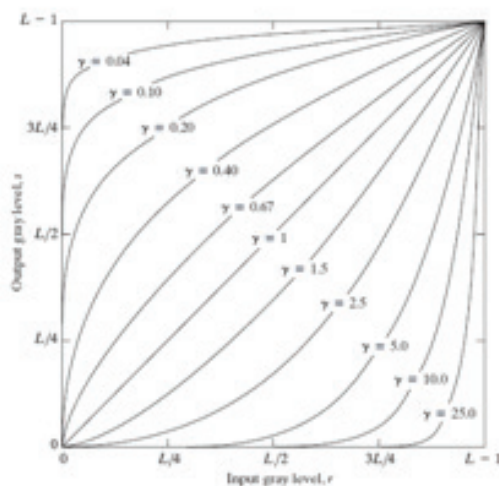


Figure 6: Curves for Gama correction



Figure 7: Effect of contrast enhancement

We can notice that, different display monitors, display images at different intensities and clarity. That means, every monitor has built-in gamma correction in it with certain gamma ranges .A good monitor automatically corrects all the images displayed on it for the best contrast to give user the best experience.

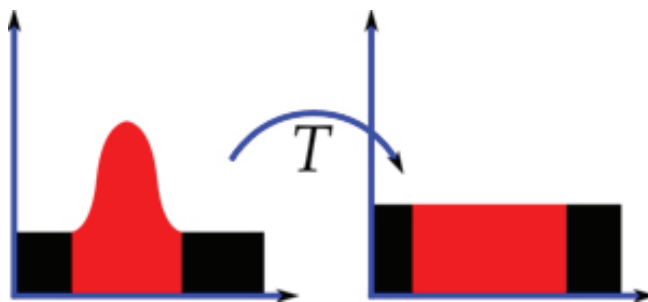


Figure 8 Illustrating histogram before and after Equalisation

2 . Histogram Equalization

Histogram is the graph between gray levels and the number of pixels corresponding to that gray level.(i.e. frequency). It can be drawn by using MATLAB program or other software programs. The main purpose of drawing histogram is to know about the dynamic range of the image so that we may devise some techniques for the proper modification of its contrast. There are many image enhancement techniques which have been proposed and developed. One of the most popular image enhancement methods is Histogram Equalization (HE). HE becomes a popular technique for contrast enhancement because this method is simple and effective. HE technique can be applied in many fields like medical image processing, radar image processing, and sonar image processing. The basic idea of HE method is to re-map the gray levels of an image based on the image's gray levels cumulative density function. (CDF) . HE flattens and stretches the dynamic range of the resultant image In HE; we obtain approximately a uniform probability density function (PDF). However, HE is rarely employed in consumer electronic applications such as video surveillance, digital camera, and television, since HE tends to introduce some annoying artifacts and unnatural enhancement, including intensity saturation effect. One of the reasons for this problem is that HE normally changes the brightness of the image significantly, and thus makes the output image to become saturated with very bright or dark intensity values.

In order to overcome the aforementioned problems, mean brightness preserving, histogram equalization based techniques have been proposed in the literature. Generally, these methods separate the histogram of the input image into several sub-histograms, and the equalization is carried out independently in each of the sub-histograms. For example, brightness preserving bi-histogram equalization (BBHE) [3], divides the input histogram into two subsections based on the mean value. Later, minimum mean brightness error bi-histogram equalization (MMBEBHE [4]) has been proposed by Chen and Ramli to preserve the brightness “optimally”. MMBEBHE also separates the histogram into two subsections. However, MMBEBHE performs the separation based on the threshold level which would yield a minimum difference between the input mean value and the output mean value which is called minimum mean brightness error [MMBE]. Another technique is the Dualistic sub-

image histogram equalization (DSIHE)[5], which has been proposed by Wang et al. [7], that also separates the input histogram into two sub-sections. But separation is based on the median value. Wadud and Kabir [11] proposed a new class of histogram partitioning named as Dynamic Histogram Equalization (DHE). The DHE partitions the original histogram based on local minima and then, assigns a new dynamic range to each sub-histogram. Ibrahim and Kang [12], proposed a method brightness preserving dynamic histogram equalization (BPDHE) similar to DHE, which is extension of the DHE. BPDHE applies Gaussian-smoothing filter before the histogram partitioning process is carried out. The BPDHE uses the local maxima as the separating point rather than the local minima used in DHE. Ibrahim and Kang claimed that the local maxima are better for mean brightness preservation. (QDHE)[13-14] method was proposed by Ooi and Nor for better contrast enhancement. QDHE partitions the histogram into four sub- histograms using the median value of intensity and then clips the histogram according to the mean of intensity occurrence of the input image and finally a new dynamic range is assigned to each sub-histogram before each sub histogram is equalized. Ooi and Nor [14] also proposed *Adaptive Contrast Enhancement Methods* with brightness preserving which comprised of two methods named as Dynamic Quadrants Histogram Equalization Plateau Limit (DQHEPL) and Bi-Histogram Equalization Median Plateau Limit (BHEPL-D). DQHEPL is extension of RSIHE, which divides the histogram into four sub- histograms, and then assigns a new dynamic range and finally implements clipping process. BHEPL-D is the extension of the BHEPL except that it clips the histogram using the median of the occupied intensity. Chang and Chang [15] presented a simple approach for contrast enhancement named as Simple Histogram Modification Scheme (SHMS). This method modifies the histogram by changing the values of two boundary values of the support of the histogram. A new method named as Background Brightness Preserving Histogram Equalization (BBPHE) [16] has been proposed by Tan et.al. The partition method used by BBPHE is based on background levels and non-background levels range. After partition, each sub-image is equalized independently, and then combined into the final output image. It is claimed that the background levels are only stretched within the original range, hence, the over -enhancement can be avoided by BBPHE

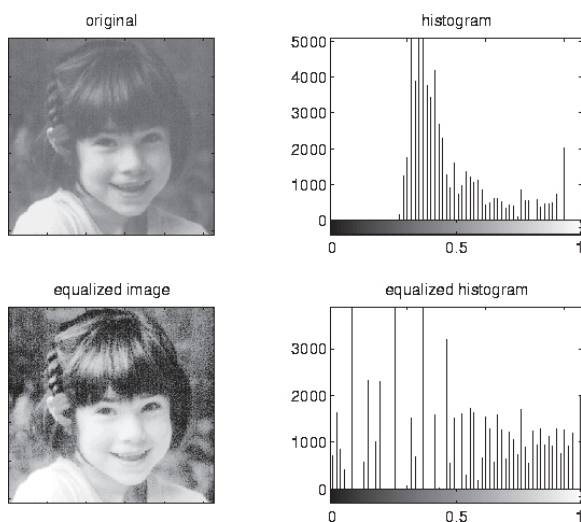


Figure 9: Original low contrast image & after HE, change in contrast



Figure 10: Illustrating the histogram of a flower

Histogram specification: It is another approach for contrast enhancement. In this method, the shape of the histogram is specified manually and then a transformation function is constructed based on this histogram. The procedure for specified histogram is:-

- a. Determine the transformation $s_k = T(r_k)$ that can equalize the original image histogram $p_r(r)$;
- b. Determine the transformation $S_k = G(b_k)$ that can equalize the desired image histogram $p_b(b)$; and
- c. Perform transformation $G^{-1}[T(r_k)]$.

Through specified histogram, we can make the histogram curve as per our requirement

3 Frequency domain methods

In an image, as we move from one pixel to the next, there would be a change in its gray level values. If the change is fast, the image would have more high frequency components. If there is slow variation in gray levels, the image would have more low-frequency components. So in an image, we have a band of frequency components. By using some filters, we can change the values of some frequency components of the image as per our requirement. Image enhancement in the frequency domain is straightforward. We simply compute the Fourier transform of the image to be enhanced, multiply the result by a filter transformation function (rather than convolving as in the spatial domain), and take the inverse transform to produce the enhanced image. We can have the following transformation functions in frequency.

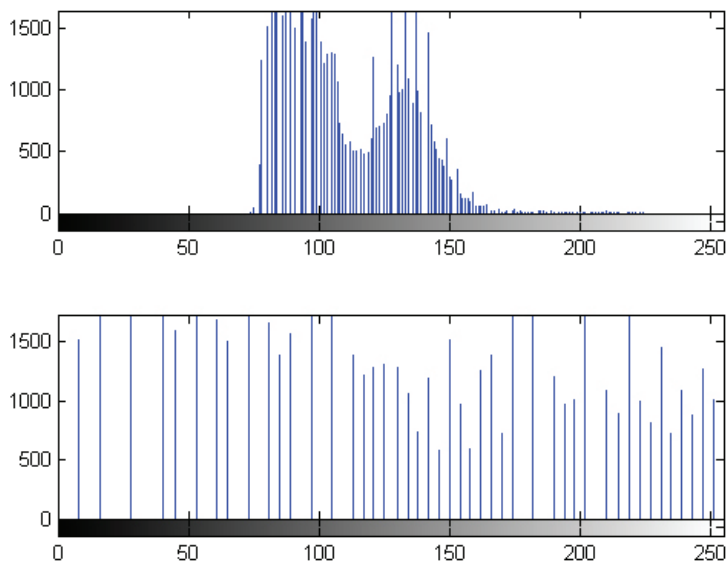


Figure 11: Effect of contrast stretching on histogram

4. Filtering:

Different types of filters can be designed:

(1) Low pass filters; and (2) High pass filters.

Low pass Filter: Low pass filtering involves the elimination of the high frequency components in the image. It results in blurring of the image (and thus a reduction in sharp transitions associated with noise). An ideal low pass filter would retain all the low frequency components, and eliminate all the high frequency components. Edges and sharp transitions in the gray levels contribute to the high frequency contents of its Fourier transform. Low pass filter smoothens an image.

High pass filter: A high pass filter attenuates the low frequency components without disturbing the high frequency information in the Fourier transform domain and it can sharpen edges and can deliver high definition information of the image

5 Spatial Filters

The use of Spatial masks for image processing is called spatial filtering. The masks used are called spatial filters. The basic approach is to take the sum of products between the gray levels of the pixels and the intensities of the pixels under the mask at a specific location in the image (2D convolution). The masks are of sizes 3×3 , 5×5 , 7×7 etc. The process of spatial filtering consists simply of moving the filter mask from point to point in an image. At each point (x, y) , the response of the filter at that point is calculated using a predefined

relationship. Spatial Filters can be distinguished as Smoothing linear filters, sharpening filters. The response of smoothing, linear spatial filter is simply the average of the pixels contained in the neighborhood of the filter mask. These filters sometimes are called averaging filters. They are also referred to as low pass filters. Sharpening filters are high pass filters which are used for highlighting the fine details in the image like display of corners. In the low pass filters, all the weights of the mask are positive while in the high mask filter, the weights are positive at the centre and negative at the outer portion of the mask.

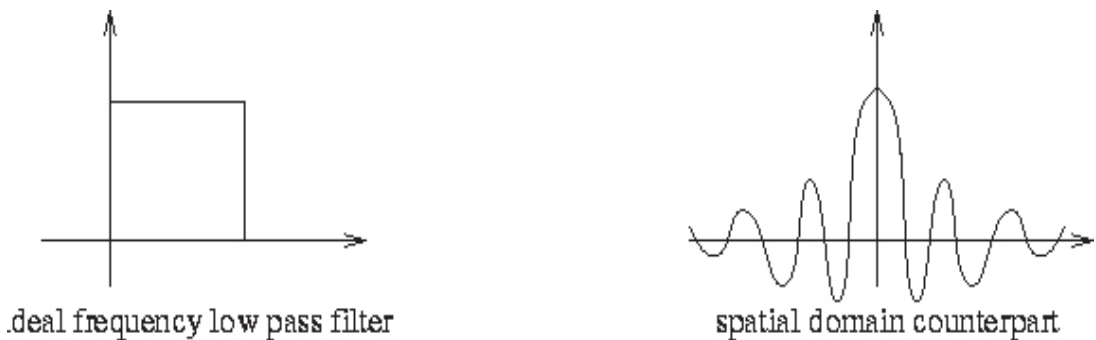


Figure 12 : Low pass Filter

5.1 Median Filters: The objective of a median filter is to achieve noise reduction instead of blurring. This method is especially effective when the noise pattern has spike-like components and the characteristic to be preserved is edge sharpness. In this method, we take the median of the mask coefficients and replace the pixel with the median value so that we can reduce the noise.

5.2 Derivative Filters: The low pass filters cause blurring of the image But the derivative filters does opposite to it. They are used for revealing high definition components in the image. There can be different types of derivative filters like Roberts, Prewitts, Sobels etc

CONCLUSION

Image enhancement techniques offer a wide variety of approaches for modifying images to achieve visually acceptable images and to improve the quality of the images. The choice of such techniques is a function of the specific task, image content, observer characteristics, and viewing conditions. The point processing methods are most primitive, yet essential image processing operations are used primarily for contrast enhancement. Negative Image is suited for enhancing white detail embedded in dark regions and has applications in medical imaging. Power-law transformations are useful for general purpose contrast manipulation. For a dark image, an expansion of gray level is accomplished using a power-law transformation with a fractional exponent. Log Transformation is useful for enhancing details in the darker regions of the image at the expense of detail in the brighter regions in the higher-level values. For an

image having a washed-out appearance, a compression of gray levels can be used by using a power-law transformation with γ greater than 1. The histogram of an image (i.e. a plot of the gray level frequencies) provides important information regarding the contrast of an image. Histogram equalization is a transformation that stretches the contrast by redistributing the gray-level values uniformly. Only the global histogram equalization can be done completely automatically. Although we did not discuss the computational cost of enhancement algorithms in this paper, it may play a critical role in choosing an algorithm for real-time applications. Despite the effectiveness of each of these algorithms when applied separately, in practice one has to devise a combination of such methods to achieve more effective image enhancement.

REFERENCES

1. Gonzalez, R. C. and Woods, R. E. (2002). *Digital Image Processing*. NJ: Prentice Hall.
2. Jain, Anil K. (1989). *Fundamentals of Digital Image Processing*. NJ: Prentice Hall.
3. Kim, Y.T. (1997). Contrast Enhancement Using Brightness Preserving Bi-Histogram Equalization, *IEEE Transactions on Consumer Electronics*, vol. **43**(1):1-8, February.
4. Chen, S. D. and Ramli, A. R. (2003). Minimum Mean Brightness Error Bi-Histogram Equalization in Contrast Enhancement", *IEEE Transactions on Consumer Electronics*, vol. **49** (4): 1310-1319, November.
5. Chen, S. D. and Ramli, A. R. (2003). Contrast Enhancement Using Recursive Mean-Separate Histogram, *IEEE Transactions on Consumer Electronics*, vol. **49**(4):1301-1309, November.
6. Wadud, A. A. Kabir, M.; Dewan, M. H. and Oksam, M. C. (2007). Dynamic histogram equalization for image contrast enhancement", *IEEE Trans. Consumer Electronic*, vol. **53**(2):593-600.
7. Kim, M. and Chung, M. G. (2008). Recursively Separated and Weighted Histogram Equalization for Brightness, *IEEE Transactions on Consumer Electronics*, vol. **54**(3): 1389-1397, August.
8. Wang, Q. and Ward, R. K. (2007). Fast Image/Video Contrast Enhancement Based on Weighted Threshold. *IEEE transactions on Consumer Electronics*, vol. **53**(2): 757-764.
9. Ooi, C.H. and Isa, N. A. M (2010). Quadrants Dynamic Histogram Equalization for Contrast Enhancement, Equalization", *IEEE Transactions on Consumer Electronics*, vol. **56**(4): 2552-2559.
10. Ooi, C.H.; Kong, N.S.P. and Ibrahim, H. (2009). " Bi-histogram with a plateau limit for digital image enhancement", *IEEE Transactions on Consumer Electronics*, vol. **55**(4): 2072-2080, November.
11. Abdullah-Al-Wadud, M. et al. (2007). A Dynamic Histogram Equalization for Image Contrast Enhancement, *IEEE Transactions on Consumer Electronics*, vol. **53**(2): 593-600, May.

12. Ibrahim, H. and Kong, N. S. P. (2007). "Brightness Preserving Dynamic Histogram Equalization for Image Contrast Enhancement", *IEEE Transactions on Consumer Electronics*, vol. **53**(4):1752-1758, November.
13. Ooi , C.H. and Isa, N. A. M. (2010).Quadrants Dynamic Histogram Equalization for Contrast Enhancement, *IEEE Trans. Consumer Electronics* **56**(4) :2543 - 2551.
14. Ooi, C.H. and Isa, N. A. M. (2010). Adaptive Contrast Enhancement Methods with Brightness Preserving, *IEEE Trans. on Consumer Electronics* **56**(4):2543 - 2551.
15. Chang, Y. C. and Chang, C. M. (2010).A Simple Histogram Modification Scheme for Contrast Enhancement, *IEEE Trans. Consumer Electronics* **56**:737 - 742.
16. Tan, T. L.; Sim, K.S. and Tso, C.P. (2012). Image enhancement using background brightness preserving histogram equalization, *Electronic Letters* **48**: 155 - 157.
17. Kim, T. , Paik, J. and Kang, B. S. (1998). "Contrast enhancement system using spatially adaptive histogram equalization with temporal filtering", *IEEE Transaction on Consumer Electronics*, vol. **44** (1): 82-86.
18. Wikipedia, YUV, <http://en.wikipedia.org/wiki/YUV>

ICT AND ECONOMIC GROWTH- AN INDIAN PERSPECTIVE

Tariq Ahmad Lone*
Dr. Tariq Ahmad War**

ABSTRACT

ICT deals with finding out various mechanisms through which digital information passes between the devices. The most common example that can be cited is the Internet, a worldwide network of computers linked together by guided or unguided media. There are however, other examples, like mobile phones, interactive televisions and personal organizers. The European Commission has recognized that ICT has the potential to have a major impact on the prosperity. When ICT is applied to business, it can lower costs, raise productivity and improve customer and supplier relationship. Among public services, it engages people with services more effectively and in communities links people to economic opportunity and brings together those with common agenda. This paper discusses how ICT can boost economic growth.

Keywords: Economic Growth, GDP, ICT, MOIT.

INTRODUCTION

ICT stands for Information and Communications Technology. There is no universally accepted definition of ICT because the concepts, methodologies and applications involved are constantly evolving at a rapid pace so much so that it is difficult to keep up with these changes. ICT covers products that store, retrieve, and manipulate information electronically in a digital form which includes products like personal computers, digital television, mobile phones, PDAs and robots. More importantly, it is also concerned with the way these different uses work together. Therefore, ICT has revolutionized the way we live, think, and perform, and even help in realizing the vision of good governance.[1]

Generally ICT for business is categorized into two types [2]:

***Tariq Ahmad Lone** is a Research Scholar at Mewar University, Gangrar, Chittorgarh, Rajasthan.E-mail: tariq380@uok.edu.in.

** **Dr. Tariq Ahmad War** is Assistant Professor at Department of Physics, Govt. Degree College Bandipora, Jammu & Kashmir.

1) **Traditional computer assisted technologies** that include, but are not restricted to Standard Office Applications like MSWord; Spreadsheets like MSEXcel; Database software like Oracle, MS SQLServer, Access etc; Presentation software like MS PowerPoint; Desktop publishing products like Adobe In design, Quark Express, Microsoft Publisher; and Graphics software like Adobe PhotoShop and Illustrator, Macromedia Freehand and Fireworks.

2) **The more recent and rapidly growing ICTs**, which allow people and organizations to communicate and share information digitally include Specialist Applications viz. Accounting package like Sage, Oracle; Specialized CAD (Computer Aided Design) programs exist for many types of design like architectural, engineering, electronics etc ; CRM (Customer Relationship Management) software that allow businesses to better understand their customers, by collecting and analyzing data about their customers.

ICT- A Broader View

ICT certainly covers all the products discussed briefly in the introductory section but will also consider the following important topics that deal with the way ICT is used and managed in an organization [2]:

- **The nature of information:** covers topics such as the meaning and value of information, the way information is controlled, limitations of ICT, legal considerations of ICT;
- **Management of information:** covers the way data is captured, verified and stored for future use, the manipulation, processing and distribution of information, securing it, designing ways to share it; and
- **Information systems strategy:** considers how ICT can be used within a business for achieving goals and objectives.

Thus, ICT is a vast and fast-changing subject.

Role of ICT in Economic Growth

ICT is playing a vital role in shaping Indian economy towards better growth. According to Ministry of Statistics and Programme Implementation data[3], the IT industry's contribution to the Indian GDP has increased from approximately 3 per cent in 2000-2001 to more than 6 percent in 2007-08 and is estimated to grow further to 8 per cent, highlighting its increasing importance to the Indian economy. Contrast this share of ICT around 6 per cent of GDP with the combined share of all registered manufacturing in various industry segments ranging from food processing, beverages, textiles, leather, basic chemicals, petrochemicals, iron and steel, basic metals such as aluminum, copper, rubber and petroleum, machinery- both electrical and mechanical which is just around 19 per cent of GDP. Obviously the importance of this sector needs no further emphasis. Apart from the indirect contribution that IT makes to the Indian Economy through e-governance etc., the direct contribution of IT exports is becoming increasingly important (Table 1).

Table 1: Growth of exports in Electronics & IT sector (Rs. Crores)

Item	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13*
Consumer Electronics	648	700	750	825	1150	2000	1500	1600	2600	3000	1400	1227	.
Industrial Electronics	500	950	1400	1515	1500	2300	3000	3885	4200	3500	4500	5600	.
Computer Hardware	1250	1800	550	1440	1200	1025	1500	990	1650	1900	1300	2100	..
Comm. & Broadcast Equipments	550	150	500	165	350	500	650	625	12280	7800	14800	18200	..
Electronics Components	1840	2200	2400	3755	3800	3800	5850	6100	10500	9700	18400	15500	..
Sub-Total	4788	5800	5600	7700	8000	9625	12500	13200	31230	25900	40400	42627	45000
Computer Software	28350	36500	46100	58240	80180	104100	141000	164400	216190	237000	268610	332769	410836
Total	33138	42300	51700	65940	88180	113725	153500	177600	247420	262900	309010	375396	455836

(Source: Ministry of Communication and Information Technology)[4]

The sectors that exhibit strong backward-linkages with other sectors of the economy are presumed to have a higher output multiplier. The ICT sector which reveals an output multiplier that is higher than the average, contrary to the popular perception that this sector may not have strong backward linkages can be an eye-opener for the Indian policy planners. The ICT sector, in context of the output multiplier, has a rank of 30 out of a total 115 sectors and the Software Sector corresponds to a rank of 80 out of 115 sectors [5]. The increase in ICT output does have a significant output multiplier effect and should thus be encouraged.

CONCLUSION

It is important to look at the economic implications of the above observations. The significance and potential of any industry can be observed by looking at three important indicators, i.e. the output multiplier, the employment multiplier and the degree of forward linkage. For the ICT sector (software and hardware), output in 2004-05 was at Rs. 88,180 crores and Rs. 266,330 crores in 2009-10. Within this short gap of five years, the output of the software sector has increased by 178,150 crores [4]. The total number of IT and ITeS-BPO professionals employed in India has grown from 0.52 million in 2001-02 to 2.20 million in 2008-09[4]. Though the ICT industry in India is mainly export-oriented, domestic consumption does show a forward linkage that is not high as on date but is expected to increase in the coming years as the economy and the domestic sectors mature making greater use of ICT in business, governance and society.

REFERENCES

1. Nair, Pradeep, "*E-governance: A step Towards Digital Democracy*", Computer Society of India. Available at https://www.academia.edu/8070365/E-Governance_A_Step_Towards_Digital_Democracy
2. Jim Riley, "*ICT-What is it?*" Available at http://www.tutor2u.net/business/ict/intro_what_is_ict.htm
3. Government of India(2011). Ministry of Statistics & Program Implementation. "*Value addition and employment generation in the ICT sector in India, 2011*". < <http://www.mospi.nic.in>>
4. Government of India(2010). Ministry of communication and Information Technology. *Information Technology Annual Report 2009-10*. Department of Information Technology < <http://www.mit.gov.in>>
5. NASSCOM- Mckinsey. *NASSCOM- Mckinsey Report 2005: Extending India's Leadership of the Global IT and BPO Industry*.

MUNICIPAL OWN- SOURCE REVENUE COMPLIANCE AND ITS POTENTIALITY *The Case of Birendranagar Municipality in Nepal*

Shankar Prasad Upadhyay*

ABSTRACT

Municipal citizens are the basis of own--source tax and non-tax revenues of Municipality. Tax revenue covers the major portion of municipal own- source revenues. Municipal revenue compliance is a complex procedure. Local revenue sources are more stable and consistent than external sources. The main aim of the present paper is to analyze the municipal revenue compliance and to find out the own- sources revenue potentiality of Birendranagar Municipality in Nepal. A descriptive and analytical research design was adopted among 166 respondents (33 municipal policy advisors and 133 municipal taxpayers) of Birendranagar Municipality and simple random sampling method was used to select the respondents. Majority of the citizens pay municipal revenues. The contribution of own- source revenue to total revenue has been fluctuating in a span of six years. Revenue compliance is satisfactory partially even though the tax rate is minimal. The study recommends the integrated property tax as a highly potential own- source revenue mode for the Municipality.

Keywords: Integrated Property Tax, Municipal Own Source Revenue, Potentiality, Revenue Compliance.

INTRODUCTION

Every resident is the source of municipal own- source revenues. Municipal revenues are generally classified into two categories: tax revenues and non-tax revenues. The key tax sources of municipalities are generally property taxes, enterprise taxes and rent taxes in Nepal.

Tax revenue covers the major portion of municipal own source revenues. Rent tax, house and land tax, enterprise tax, vehicle tax, property tax, entertainment tax, commercial video tax, advertisement tax etc. are the main sources of tax revenue. Parking charge, and service fee/charge, rental charge, building permit fee etc. are the main non-tax revenue sources of

* **Shankar Prasad Upadhyay** is PhD Scholar of Mewar University, Chittorgarh, Rajasthan, India. E-mail: shankarsirs@gmail.com.

Nepalese municipalities.

Tax is an important source of local resources. The tax theory is divided into *ability to pay* and *benefit* principles. The benefit principle of taxation is suitable for local taxation whereas *ability to pay* principle is suitable for central government taxation. But, in developing countries, like Nepal, in general, there are only a few available tax bases. Therefore, the local government has been weak to levy the tax. In fact, taxes are paid as a price for the benefits received from public services. Therefore, benefit principle becomes workable only when benefit from local services can be approximately identified. (Shrestha, 2009).

Organization for Economic Cooperation and Development (2001) advocates that the categories of tax compliance are of administrative and technical nature where the former refers to complying with administrative rules of lodging and paying otherwise referred to as reporting compliance, procedural compliance or regulatory compliance and the latter refers to complying with technical requirements of the tax laws in calculating taxes or provisions of the tax laws in paying the share of the tax (Mumumba Omweri Marti, 2010, pp. 114-115). Many taxpayers pay little attention to tax matters and may not even view tax evasion as an ethical issue. Likewise, their ethical values may be much more tempered by situational exigencies than idealistic expectation. (Philip M.J. Reckers, 1994)

The fiscal exchange theory suggests that the presence of government expenditure may motivate compliance and that governments can increase compliance by providing goods that citizens demand in a more efficient and accessible manner (Cowell and Gordon, 1988; Levi, 1988; Tilly, 1992; Moore, 2004; 1998). Alm *et al.* (1992) note that compliance increases with (perceptions of) the availability of public goods and services. Within the fiscal exchange framework, we expect the probability of an individual's tax compliant attitude to be positively correlated to satisfaction with the provision of public goods and services. Kirchler *et al.* (2008) and Fauvelle-Aymar (1999) have stated that according to the political legitimacy theory, tax compliance is influenced by the extent to which citizens trust their government (Merima Ali, 2013, p. 8). Finally, we find indications that tax knowledge and awareness have a significant impact on tax compliance attitude (Merima Ali, 2013, pp. 7, 27).

Some of the reasons for tax compliance and tax non-compliance, and some of the factors for tax non-compliance were found to be: the inability to understand tax laws i.e. rates of tax, filing and paying dates etc., a feeling that they are not paying a fair share of tax, positive peer attitude i.e. a belief that your neighbours are reporting and paying tax honestly, and rewarding taxpayers i.e. giving a trophy for being best tax- payer, and motive for low profits. Some of the factors depending on how they are applied can facilitate compliance and non-compliance include: avoiding paying tax fines and penalties; the use of informants by KRA i.e. report tax evaders, aggressive enforcement efforts by KRA i.e. ensuring tax audits and prosecutions, payment of fines and penalties; high degree of being detected for no-payment of tax; high degree of risk aversion i.e. fear of tax audits; ethics and mobility i.e. a feeling that tax is an obligation and believing in no corruption; positive government image i.e. government is fighting corruption and is achieving tax objectives & harassment from KRA (Mumumba Omweri Marti, 2010, p. 9)

LEGAL PROVISIONS

Regarding non-compliance of municipal revenue by the citizen, Nepal government has made the provision under the Section 260 of Nepalese Local Self Governance Act (1999) that if any person does not pay any tax, duty or charge levied or contracted or any other amount due and payable to the Local Body, it shall be recovered by the District Administration Office as government dues. Likewise the government has mentioned the provision under the sub section 2(a & b) and 4 of section 165 of Nepalese Local Self Governance Act (1999) that if any one does not pay the taxes, fees, charges, tariffs contracted or imposed by the Municipality and any other amount due and payable to it, the Municipality may take action as follows :-

(a) If any one does not pay the taxes, fees, charges, which may be collected under this Act and other amounts due and payable to the Municipality, it may write to the concerned body to stop the transfer of ownership of the movable, immovable property of such person, may seal or lock up the trade, profession, and withhold the transactions including export and import.

(b) If the amount which the Municipality is entitled to collect under this Act could not be covered up even from the stoppage of the house, land, transaction or assets of the concerned person pursuant to clause (a), the Municipality may recover it by auctioning his house, land or other assets, if any. If any one does not pay any taxes, fees, charges, duties, tariffs and any other amount due and payable under this Act, the Municipality may stop the service provided by it, in regard to such persons.

The Department of Revenue Investigation of Nepal Government has set the preventive module for revenue compliance. The preventive strategy includes compliance of the acts and rules, mobilization of flying and emergency squad, adherence of code of conduct of investigation officials, issuance of guidelines and orders, use of Information technology etc (Nepal Government , 2014).

CHALLENGES

There are various concerns regarding the management of municipal finance in Nepal. There is no clear transparency for what the levied taxes are utilized. The taxpayers want to have better services for its taxes, but often they are not delivered by the local administration. Also, Municipalities must ensure that their job descriptions, competency requirements, advertisements, selection criteria and appointments are aligned with the requirements set out in the regulations. In most of the developing countries, budget execution and accounting processes were/are either manual or supported by very old and inadequately maintained software applications. This has had deleterious effects on the functioning of their public expenditure management (PEM) systems that are often not adequately appreciated (Khemani, 2006, p. 2).

A challenge for a study of taxpayer attitude is a lack of reliable data due to an individual's reluctance to reveal one's own non-compliance. In this paper, we use an indirect measure of individuals' tax compliance attitude to avoid direct implication of "wrongdoing" by the respondents. We use an indirectly phrased question, where respondents are asked to

state whether they think that it is wrong for people not to pay taxes that they own on their income. Respondents are provided with rank responses of “not wrong at all”, “wrong, but understandable” and “wrong and punishable”. Based on these responses, individuals are considered as having a tax compliant attitude if their response is “wrong and punishable” and a non-compliant attitude if their response is either “not wrong at all” or “wrong, but understandable”. (Merima Ali, 2013, p. 5).

Tax compliance is obviously critical for effective sub-national revenue generation. There is limited empirical evidence, but available analysis indicates that compliance can improve or deteriorate under decentralization. The effect seems to depend on economic conditions, citizen attitudes about sub-national governments, and variations in sub-national political dynamics, including the willingness and ability of sub-national governments to enforce the tax code. Local tax compliance in Tanzania was positively related to ability to pay and (perceived) probability of prosecution, but negatively related to perceptions of oppressive tax enforcement and weak satisfaction with services. (Smoke, 2013)

Moreover, this study provides some guide for future research into tax compliance behaviour. More researches are needed on moderating effect of risk preference on relationship between taxpayer's attitude towards tax evasion and his/her compliance behaviour to check the consistency of the results produced by this study on this moderator. In addition, research studies are desired on taxpayers' attitude towards government and the effect of individual religiosity on tax fraud as well as on other factors influencing tax compliance behaviour particularly in developing countries. (James O. Alabedi, 2013). Revenue compliance is the support of citizen or prospective tax payers to the revenue programmes implementation. It has always been an important issue in revenue administration for choosing of system of compliance that best serves the implementation of revenue policy. The knowledge for local governments about operation of an efficient tax administration is essential for local revenue improvement. In deciding the extent of compliance the determinant factor is information collection mechanism. A key consideration is relationship and trust with the taxpayers at the local level and monitoring.

LOCAL REVENUE POTENTIALITY

Internal sources of revenue are more stable and consistent than external sources. External sources of revenue are less reliable source of financing because of wide fluctuation in nature. These sources, therefore, should have supplementary support in municipal financing. Municipalities must be authorized to expand their internal revenue base and modify the tax rate according to local situation so that they can collect adequate revenue to meet their financial needs (Thapa, 2004, p. 4)

RESEARCH OBJECTIVES

The major aims of the present study are to analyze the municipal own -source revenue compliance and to find out its potentiality in Birendranagar Municipality in Nepal.

STUDY AREA

The study was conducted in Birendranagar Municipality of Surkhet district of Nepal. Figure 1 shows the location of the sample Municipality.

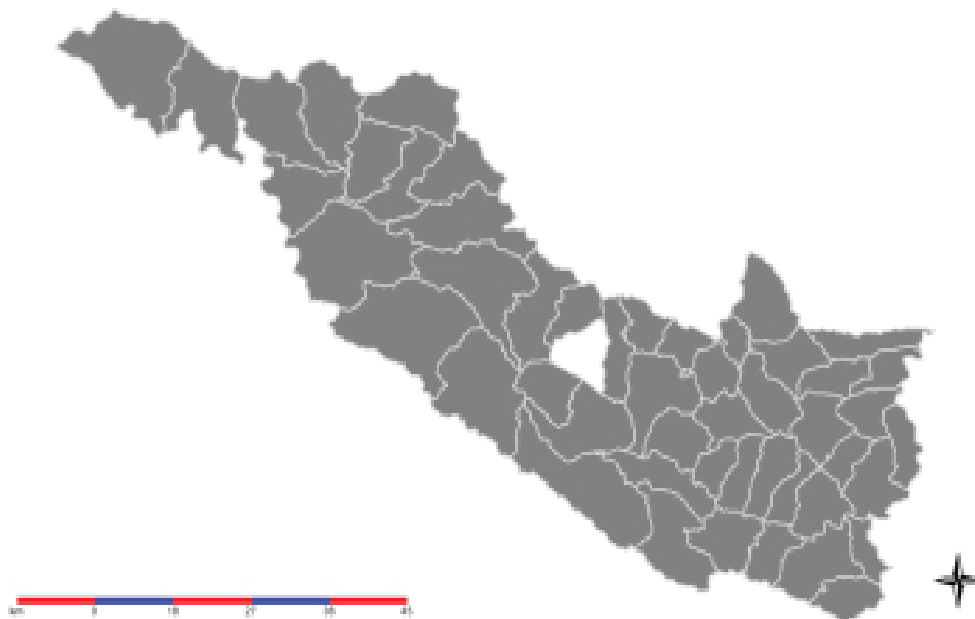


Figure 1: Surkhet District, Nepal
BIRENDRANAGAR MUNICIPALITY
(Map of Surkhet District, *Source: NEksapInfo, 2013*)

RESEARCH DESIGN AND METHODS

The total number of Municipalities in the district is fifty eight. The formation processes of Metropolitan and Sub- metropolitan cities are different than municipalities. One metropolitan city and four sub- metropolitan cities are not able to be representative of all the municipalities. Therefore, these have been excluded from the study population. Out of 58, only 53 municipalities are the population of the study. In this study, non-probability (purposive) sampling technique was applied for the selection of Municipality and Birendranagar municipality was taken as a sample from the Mid-Western Development Region (Hill Ecological Belt) of Nepal. Cross-sectional method has been used for the collection of primary data and analytical and descriptive research design has been adopted to analyze the compliance of municipal own- source revenue and to find its potentiality of Birendranagar Municipality.

Municipal policy advisors and taxpayers were the respondents of the study. In total, 33 samples were taken from municipal policy advisors including different local political party members, CCI (Chamber of Commerce and Industries) members, civil society members, and others and 100 samples were taken from municipal taxpayers of Birendranagar municipality.

Self-administered questionnaires were developed in 5 point Likert Scale as well as Dichotomous and conducted survey for primary data collection and secondary information were obtained from Birendranagar municipality, Ministry of Federal Affairs and Local Development, District Development Committee Surkhet, Local Bodies' Fiscal Commission, and Urban Development Through Local Efforts (udle/GTZ). Relevant books, journals as well as published and unpublished performance or work of the related organizations working with local bodies. They were used for the macro-analysis of the study. For the secondary data analysis purpose, different analytical tables were prepared and different statistical tools were used for primary data analysis.

RESULTS

In this research, there were total 166 respondents (133 municipal taxpayers and 33 municipal policy advisors). Among them 77.7% respondents were males and female respondents were 22.3 percent. Out of 33 municipal policy advisors, 48% were local political party members, CCI members were 39.4%, government officers were 3% and few were civil society members. Likewise, more than 51% taxpayers were engaged in business activities and 30.8% taxpayers were involved in teaching. Similarly, about 8.3% and 9.8.% taxpayers were involved in government service and agriculture, respectively. Both types of respondents' views have been collected to analyze the municipal tax compliance and to find out the potentiality of own sources of revenue of Birendranagar municipality. On the basis of questionnaire survey conducted in the July 2014, the scenario of municipal own- source revenue compliance and expressed reasons for non-compliance are presented and discussed as follows:

Table 1: Municipal Tax/Fee Contribution Scenario of Birendranagar Municipality.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tax not contributed	30	22.6	22.6	22.6
	Tax Contributed: Less than Rs.1000	73	54.9	54.9	77.4
	Rs. 1000 to Rs. 2000	30	22.6	22.6	100.0
	Total	133	100.0	100.0	

(Sources: Field Survey, 2014)

The above Table shows that only 22.6 percent municipal citizens are non-taxpayers and 77.4 percent taxpayers act in accordance with the municipal revenue provisions. Out of 103 sample taxpayers, 73 taxpayers have paid the municipal revenue less than Rs. 1000/- and only 30 taxpayers have paid in between the range of one thousand to two thousand rupees per year. It indicates that most of the citizens have complied with the municipal revenues.

Table 2 : Reasons for Non-payment of Municipal Taxes/Fees by the Citizens

Reasons		Frequency	Percent	Valid %	Cumulative %
Valid	Tax rate is very high	5	3.8	16.7	16.7
	No information to pay tax	2	1.5	6.7	23.3
	No ability to pay tax	4	3.0	13.3	36.7
	Chances of tax rebate in future	19	14.3	63.3	100.0
	Total	30	22.6	100.0	
	Tax already paid	103	77.4		
			100.0		

(Sources: Field Survey, 2014)

The total number of non- taxpayers is 30 (22.6% in total), and out of them 19 (i.e. 14.3 % in total) non- taxpayers have not paid municipal tax considering the chances of tax rebate in future. As expressed by the 11 of citizens of Birendranagar Municipality, high tax rate, lack of information and ability are the reasons for non-payment of municipal taxes or fees.

Table 3: Views on Revenue Potentiality (in %)

Revenue Headings	Tax Payers' views					Policy Advisors' Views				
	No Potential	Hardly Potential	Semi-Potential	Potential	Highly Potential	No Potential	Hardly Potential	Semi - Potential	Potential	Highly Potential
Integrated Property Tax	0	0	11.3	27.8	60.9	0	0	6.1	15.2	78.8
Business/ Professional Tax	0	0.8	6	54.9	38.3	0	0	6.1	21.2	72.7
Rent Tax	0.8	3	33.1	34.6	28.6	0	0	9.1	42.4	48.5
Building Permit Fee	0	7.5	21.8	23.3	47.4	0	3	3	60.6	33.3
Service Charges	0	3.8	21.1	60.2	15	0	3	12.1	81.8	3
Environment Pollution Fee	0.8	5.3	12.8	60.2	21.2	0	12.1	12.1	69.7	6.1

(Sources: Field Survey, 2014)

Table 3 depicts the degree of potentiality of major own- sources revenue from the view point of municipal taxpayers and policy advisors. Integrated property tax is highly potential revenue source of Birendranagar Municipality from their viewpoint. From view point of municipal policy advisors, business/ profession tax and rent tax are highly potential and from the view point of taxpayers, building permit fee is highly potential. Their views on service charge and environment fee are same (i.e. potential).

Table 4: Contribution of Own Source Revenue on Total Revenue (Rs. in ‘000)

Descriptions	Fiscal Years						
	2007/008	2008/009	2009/010	2010/011	2011/012	2012/013	Total
Total Revenue Received (Rs.)	25016	57188	72975	81608	48408	68794	353989
Own Source Revenue Received (Rs.)	8490	13606	16542	17845	13781	18124	88388
Contribution of Own Source Revenue to Total Revenue (%)	33.94	23.79	22.67	21.87	28.47	26.35	24.97

(Source: Birendranagar Municipality Office, 2014)

The above Table reveals the contribution of own source revenue on total revenue of Birendranagar municipality in past six fiscal years. The average contribution of six years is about 26%.

Table 5: Major Own Source Revenue Collection Scenario

Major Revenue Headings	Fiscal Year-wise Collection (Rs. in ‘000)						
	2007/008	2008/009	2009/010	2010/011	2011/012	2012/013	Total (Rs.)
Integrated Property Tax	505	549	3041	2769	1524	2322	10710
Business/ Professional Tax	361	346	118	490	427	543	2285
Rental Tax	42	48	23	42	36	64	255
Building Permit Fee	995	1739	1500	1442	594	1180	7450
Service Charge/ Fee	254	382	365	719	272	534	2526
Total	2157	3064	5047	5462	2853	4643	23226

(Source: Birendranagar Municipality Office, 2014)

The above Table displays the own source revenue collection scenario of Birendranagar Municipality. The trend of revenue collection from above major headings is not consistent.

DISCUSSION

The numbers of municipal taxpayers are 103 (77.4%) out of 133, which means that 30 (22.6%) citizens are non taxpayers. Out of 103 taxpayers, 73 taxpayers have paid below Rs. 1000/- per year and only 30 taxpayers have paid more than Rs.1000/- to Rs.2000/-, which shows that the tax rate may be low. Municipal tax abatements should be strictly limited to areas that are truly in need of rehabilitation or redevelopment. (Boxer, 2010)

Most of the non-taxpayers (19 out of 30) express the views that the chance of tax rebate in future is the main reason for non-payment of municipal tax. The other non-taxpayers express their views that the high tax rate, lack of information and ability are the other causes for non-payment of municipal taxes or fees. When taxpayers get feedback from their governments in connection with the use to which their taxes are put, their voluntary compliance levels may increase as a result (Adafula, 2013, Sep 19, p. 56).

Integrated property tax is highly potential revenue source of Birendranagar municipality from the viewpoint of municipal taxpayers and policy advisors. Property tax is at present and will most likely continue to be an important source of revenue in urban councils (Fjeldstad, 2000). House and land tax is the second largest revenue source of all the municipalities of Nepal (Silwal, 2012). Property tax proponents have long advocated redefining the property tax so that it might come closer to realizing its potential. Many have identified specific best practices, including administrative and policy reforms that have been broadly successful (Bahl, 2009). Business/profession tax and rent tax are highly potential according to the opinions of policy advisors. From the view point of taxpayers, building permit fee is highly potential. Service charge and environment pollution fee are potential revenue sources of Birendranagar Municipality.

The average contribution of own- source revenue on total revenue of Birendranagar Municipality of past six fiscal years is more than 25%. The rate of own- source revenue contribution has been fluctuating year by year and the lowest contribution is 21.87%. According to udle/GTZ report, the performance of own- source revenue to total revenue of the fiscal year 2006/07 of Birendranagar municipality was only 28.45% which was very lower than set standard i.e.60% (udle/GTZ, 2008, pp. 10-14). On the one hand, the performance of own- source revenue to total revenue is low and on the other hand, the trend of revenue collection from major headings is not consistent. Thus, it can be hypothesized that under these conditions, tax revenues will be spent more in accordance with taxpayer preference, which in turn increases tax morale (Schneider, 2006).

CONCLUSION

The study concludes that the municipal own- source revenue compliance and its potentiality are two different matters. Most of the taxpayers have paid lower amount of taxes or fees, which

denotes that either the tax rate fixation power is low or there is lack of revenue mobilization plan and sound revenue administration. To some extent, revenue compliance is satisfactory even though the rate is minimal. The expectation of the most non-taxpayers is that there is probability of tax rebate by the municipality in future, which indicates that the municipality has practiced such type of tax rebate decisions in the past. There is no doubt the integrated property tax is highly potential own source revenue and enterprise tax, rent tax, building permit fee, service charge and environment pollution fee are potential own-revenue sources of Birendranagar municipality. Both the contribution of own-source revenue to the total revenue and the collection of major own-source revenue are not consistent within the study period, which signifies that the municipal revenue compliance and the joint effort on potential local revenue collection with revenue mobilization plan should be carried out concurrently.

ACKNOWLEDGEMENT

I am grateful to Prof. Dr. Kamal Das Manandhar for his regular support and guidance to me. I would also like to express my sincere thanks to Prof. Tatwa Prasad Timsina and Mr. Tej Bahadur Karki of PhD Centre, Kathmandu for regular support. I am also grateful to the lecturers of Makawanpur Multiple Campus, Hetauda, Mr. Sangam Chaulagain and Mr. Yam Bahadur Silwal for language editing and field work respectively. Also I am thankful to Mr. Hot Raj Lamsal (Executive Officer, Birendranagar Municipality) and all the respondents for their amiable cooperation.

REFERENCES

1. Adafula, A. A. (2013, Sep 19). Evaluating Taxpayers' Attitude and Its Influence on Tax Compliance Decision in Tamale, Ghana. *Academic Journals*, **56**.
2. Alm, J., McClelland, G. and Schulze, W. (1992) 'Why do people pay taxes?', *Journal of Public Economics*, Vol. **48**: 21-38.
3. Bahl, R. (2009). *Property Tax Reform in Developing and Transitional Countries*. USAID.
4. Boxer, A. M. (2010). *A Programmatic Examination of Municipal Tax Abatements*. New Jersey: State of New Jersey, Office of the State Comptroller.
5. Fjeldstad, O. H. (2000). *Dilemmas of Fiscal Decentralization. A Study of Local Government Taxation in Tanzania*. Tanzania: Government of Tanzania.
6. James O. Alabedi, Z. Z. (2013, July 25). Individual Taxpayers' attitude and Compliance Behaviour in Nigeria: The moderating Role of Financial Condition and risk Preference. *Journal of Accounting and Taxation*, 12-13.
7. Khemani, J. D. (2006). Introducing Financial Management Information System in Developing Countries. *OECD Journal on Budgeting*, **5**(2): 2.
8. Kirchler, E., E. Hoelzl & I. Wahl (2008). Enforced versus voluntary tax compliance: The "slippery slope" framework., *Journal of Economic Psychology*, **29**, 210-225.

9. Merima Ali, O. H. (2013). *Citizens' Attitudes Towards Taxation in Kenya, Tanzania, Uganda and South Africa*. Norway: Afrobarometer.
10. MLD. (2010). *A study to Identify Sources of Revenue, Revenue Mobilization Capacity and Expenditure Needs in Mountainous (Himali) Districts*. Kathmandu: Ministry of Local Development.
11. MLD, udle/GTZ. (2008). *Land Property Tax in Nepal: Status Quo, Lessons Learnt and Recommendations*. Kathmandu: MLD and UDLE/ GTZ.
12. Mumumba Omweri Marti, M. S. (2010, April 8). Taxpayers' Attitudes and Tax Compliance Behaviour in Kenya. *African Journal of Business and Management*, 114-115.
13. National Treasury Republic of South Africa (2011). *Financial Management and MFMA Implementation*. Africa: National Treasury Republic of South Africa.
14. Nepal Government (2014). www.dri.gov.np. Retrieved from www.dri.gov.np.
15. Philip M.J. and Reckers, D. L. (1994, December). The Influence of Ethical Attitudes on Taxpayer Compliance. *National Tax Journal*, 47(4), 829.
16. Schneider, B. T. (2006). *What Shapes Attitudes Towards Paying Taxes? Evidence From Multicultural European Countries*. New Haven: Yale Centre for International and Area Studies
17. Shrestha, B.M. (2009, December). Fiscal Decentralization and Local Resource Mobilization in Nepal, *Nepalese Journal of Public Policy and Governance*. XXV(2): 6.
18. Silwal, S. (2012). *Municipal Finance in Nepal*. Kathmandu: Sudarshan Silwal.
19. Smoke, P. (2013 April). *Why Theory and Practice are Different: The Gap Between Principles and Reality in Subnational Revenue System*. Atlanta, Georgia: International Center for Public Policy, Andrew Young School of Policy Studies.
20. Thapa, R. B. (2004). Financial Resource Mobilization in Pokhara Sub-municipal Corporation, *Journal of Nepalese Business Studies*, 4.
21. udle/GTZ. (2008). *Financial Key Indicators of Birendranagar Municipality*. Kathmandu: udle/GTZ. Available at <http://lgcdp.gov.np/home/pdf/GTZ%20Report%20on%20Future%20Nepal%20Municipal%20Finance.pdf>

FEMINIST CONCERNS IN CANADIAN NOVELIST CAROL ANN SHIELDS' UNLESS

Dr. Anupam Chakrabarti*

Arati Kumari **

ABSTRACT

This paper examines the feminist concerns in the Canadian novelist Carol Ann Shields' novel entitled UNLESS. Carol Ann Shields has written novels, poems, biography and plays. The paper explores the feminist approach dealt by Shields in this novel. Shields has used the theme of immanence and transcendence in Unless by her main character Reta Winter. "Immanence", to her, is the historic domain assigned to woman: a closed-off realm where woman are interior, passive, static and immersed in them. Whereas 'Transcendence' signifies male realm: active, creative, productive, powerful, extending outward into the external universe. Every human life should have a balance of these two forces. But from the ancient time, women are deprived of 'Transcendence'. Women can possess only the role of immanence. She gives her female protagonist, Reta Winter a different shape of self-reliance and self-identity. The paper also throws light on different views of feminism dealt by many prolific feminist writers such as: Simone De Beauvoir, Virginia Woolf, Mary Wollstonecraft, Betty Friedan, Germaine Greer, Adrienne Rich and Susan Brown Miller.

Keywords: Existentialism, Immanence, transcendence, goodness, *The Second Sex*, motherhood, Sexual politics.

INTRODUCTION

*"I think women are foolish to
pretend they are equal to men,
they are far superior and always have been.*

-William Golding in Lord of the Flies (1954)

This excerpt from William Golding underscores a cultural construct so different from that of the members of the patriarchal thinkers.

*Arati Kumari is pursuing M.Phil (English) from Mewar University, Gangrar, Chittorgarh, Rajasthan.

** Dr. Anupam Chakrabarti is a Research Supervisor at Department of English, Faculty of Humanities, Mewar University

Unless(2002), the last novel written by Carol Ann Shields was a finalist for the Canada Reads Contest for the best Canadian novel of the first decade of the 20th century. It was shortlisted for Man Booker Prize in 2002 and Scotia Bank/Giller Prize and shortlisted in 2003 for the Orange prize. This novel is full of feministic approach. It is written in women's ink. This novel deals the several aspects of feminism. It combines the English and French language. Rita Winters is the main protagonist of this novel. She is a writer and translator of French to English. She is pursuing research on the work of Danielle Westerman, French "feminist pioneer, Holocaust survivor, cynic and genius, Simone de Beauvoir's spiritual daughter." The novel deals with the second wave of feminism. To understand the feminist aspect in this novel, it will be useful to track the voices of feminism and their history in a nutshell.

Feminism is not a term that slips into anachronism. It was first used in France in the 1880's for describing the politics of equal rights for women. But in England, the term gained currency only after 1890. The term 'feminism' combined the French word for women, *femme* and *isme* which pointed to either a political ideology or social movement. To put it plainly, feminism is a belief that underscores those men and women are from their births not of unequal worth. The paradigm is that women can change their social place both consciously and collectively. Women's liberation in the west took a momentous turn in the mid-sixties of the twentieth century. Women's liberation movement aimed at the equality of women and men in different spheres: work and politics. Within the sphere of reproduction and sexuality, feminism stood for women's difference from men. Ever since the seventies, feminism became a world-wide movement and with that the role of women came to be viewed in an altogether different light. It was Aphra Behn(1640-1689), a British playwright who first stated that women are a distinct social category but her social status is not at all equal to that of man. Several names crop up as classic voices on feminist theories but the few that demands careful and elaborate attention are Mary Wollstonecraft's *A Vindication of The rights of Women* (1792), Margaret Fuller's *Women in the Nineteenth Century* (1845), John Stuart Mill's *The Subjection Of Women* (1869) and Friedrich Engel's *The Origin of The Family, Private Property And The State* (1884).

Virginia Woolf's *A Room of One's Own* (1929) can be read on two counts: as an autobiographical account and a liberating account. A document deserves accolades for its excellence in form and content. As readers of feminist theories, our attention is drawn to that passage in Woolf's treaties where she writes feelingly how she was shown the door of an Oxbridge library because "ladies are only admitted if accompanied by a fellow of the college or furnished with a letter of introduction." (*A Room of One's Own*, p. 9). Woolf's remark is a significant pointer to the lack of equality between the two sexes. Much of the lack of creative expression in women, avers Woolf, can be ascribed to the material impoverishment which women face in their lives. Woolf bemoans the fact that women belonging to the middle class and upper middle class flaunt a life style that is luxurious but their control over fiscal matters in the family is negligible. The onerous task of bearing and rearing children has fallen to the lot of women, but throughout their lives they have been controlled by patriarchy, Woolf states. In the same breath, she does not spare Shakespeare for making his heroine play second fiddle to the fancies of his male protagonists: "Men have tended to write about women as sexual and romantic objects; even Shakespeare's heroines are generally important as characters through

their relationship with men” (*A Room of One’s Own*, p. 37). The central argument of Woolf is that women not only become victims of men but also victim of themselves and they further become victims of an unjust, social order or patriarchy by presenting themselves as flattering mirrors before their menfolk: “women have solved all these centuries as looking glasses possessing the magic and delicious power of reflecting the figure of men at twice its natural size without that power the earth would still be swamp and jungle.” (*A Room of One’s Own*, 37)

Close on the heels of the Second World War in 1945, the rights of women came to be sounded in a manner unheard of before. Small wonder, shops across Europe were deluged with books that dealt with the cultural and literary implication of feminism. Simon de Beauvoir’s *The Second Sex* (1949) based on the existentialist philosophy of Sartre was a highly radical work. In this highly thought-provoking work, Beauvoir presents the male as the positive norm and women as the negative norm and she prefers to label the women as *second sex* or the *other*: “the humanity is male and man defines woman not in herself but as relative to him, she is not regarded as an autonomous being..... For him she is sex-----absolute sex, no less. She is defined and differentiated with reference to men and not he with reference to her: she is incidental, the inessential as opposed to the essential. He is the Subject, he is the Absolute----- She is the other.” (*The Second Sex*, p. 16). A perceptive reader of Beauvoir’s radical views finds her views anticipated by Wollstonecraft’s in her eye opening book, *A Vindication of The Rights of Women* (1792): she was created to be the toy of man, his rattle, and it must jingle in his ears whenever, dismissing reasons chooses to be amused (*A Vindication of The Rights of Women*, p.66). In order to prove that women is the ‘Other’ Beauvoir examines biological, Marxist and psychoanalytic theories to show that all aspects of social life are governed by the assumption that man is the superior norm and woman, the inferior norm. Another thought central to her feminist concerns, is the marginal position of women and the arts. Her critiquing is not merely confined to this. She includes within the purview of her theories ‘the great collective myths’ pertaining to women, particularly in those works authored by men. Making ample use of anthropological, philosophical, sociological and physiological evidence in support of this contention, Beauvoir urges his female readers not to regard her theory of the “otherness of women as a stumbling block on their thought process”. (*Women in The house of Fiction*, p. 12).

One of seminal books on the movement of modern women is Betty Friedan’s *The Feminine Mystique* published in 1963, in the hey-days of women’s liberation movement. It is rightly recognized as an indispensable book for a proper understanding of the movement. The problem/question that makes Friedan ponder over is, “*what accounts for the unhappiness?*” The answer to her question is equally strange -----‘the problem that has no name’. Then she tries to decipher the reason that causes the problem. In the course of a research, she critically examines statistical data, theories and personal interviews drawing her inferences. The mystique of feminism that she talks about is built on a high-flown image of femininity. According to Friedan, women have been encouraged to become the ideal home maker. They cannot think of soaring above the limited range of the home maker or mother. In the process of becoming impeccable housewives, they ignore the need for education and career aspiration.

Friedan argues that women can develop their own identities but for the feminine mystique. The feminine mystique thwarts the growth of proper sensibility of women and makes them blind to several career options which are open to them. Such a mind-set creates unsurmountable problems both for the housewives and their families. Friedan has written other books on the need for freedom of women and the indispensability of careers for women but most of them are marked by controversy.

Germaine Greer's *The Female Eunuch* (1970) marks a water-shed in the history of feminism. This is a highly informative book as it relies on several sources: social sciences such as history and politics and the humanities such as literature and cultural studies. Much of Greer's social commentary is based upon her critical examination of the operation of women and the human face of her polemical work is its strongly-worded argument which is passionately rendered. Greer looks at marriage as something which is no better than slavery for the womenfolk, albeit a slavery that is legalised. She makes a virulent attack on the male dominant society for the way it misrepresents female sexuality on the one hand and on the other hand, denies women in a highly systematic manner. In other book *The Whole Women* (2012), she takes up the theme on which she had scripted *The Female Eunuch*. Without mincing matters, she states that feminism has been relegated to the background and the female question has not been answered. She takes a close, hard look at the issues which women face at the close of the twentieth century and in doing so, combines her wild humour with passionate rhetoric-script. Greer exposes the discriminatory attitude of the males towards the females. Whether a woman is in her kitchen, in the super market or in her place of work, the ugly monster of discrimination dogs her footsteps and makes her days unbearable, she states.

No book on feminism takes up the theme of the institution of motherhood as much as *Of Woman Born: Motherhood as Experience and Institution* (1976) by Adrienne Rich. The book endeavors to make a clear-cut distinction between the social institution of motherhood and the experience of motherhood. A woman's reproductive and sexual possibilities are an integral part of her physiology and it is the institution of motherhood which controls it. On the other hand, when a woman undergoes the experience of motherhood, she derives immense pleasure and power. The theme of sex role stereotyping and the resultant mental illness is the subject of the book *Women and Madness* (1972) by Phyllis Chesler. Chesler is concerned with female identity not in past societies but in contemporary societies. Her research shows that female identity is integrally connected with sickness and insanity, more particular when women belong to contemporary societies. Chesler's findings are that when women do not choose to follow gender norms intentionally or unintentionally, society does not form a healthy impression about them. Society tends to look down on such rebellious tendencies of women as clear manifestations of insanity or psychological imbalance.

There was a spate of books on radical feminism in the seventies of the twentieth century and theorists like Susan Brownmiller, Susan Griffin and Mary Daly made us sit and ponder deeply over there themes on radical feminism. Most of the themes pivoted on men's hostility against women and the in-born aggressive instinct prevalent in the psychological thought process of males. Susan Brownmiller makes the fact-finding sociological discovery that sexual violence becomes a pliant to albeit a devious tool in the hands of men to subjugate women. In

her eye opening book, *Against Our Will: Men, Women and Rape* (1975), Brownmiller argues how men spin their web over women either by committing rape on women or by intimidating them with their rapacious designs. Susan Griffin is more downright in her views against rape which she castigates as an all-American crime. She makes a close study of the several metaphors and actual rape practices in America in her highly readable book, *Rape: The Power of Consciousness* (1979) that they become a paradigm of masculine violence of the not too remote American society. Of the three American radical feminists cited above, Mary Daly is the most remarkable in her thought-provoking book, *Gyn/Ecology: The Meta Ethics of Radical Feminism* (1978). She makes an in-depth study of the major histories and major cultures of the world to conclude logically that male dominance and sexual violence goes hand in hand. Mary White Stewart also harps on the theme of violence against women but from a different perspective. Her study of political and economic conditions made her conclude that sexual violence is an immediate fall-out of decisions both on the political and the economic sphere and is backed by the cultural constructs which underscores that males are superior whereas females are inferior. This is the theme of the book of Mary White Stewart entitled, *Ordinary Violence: Everyday Assaults against Women* (2002). Many feminist theorists interpret violent acts against women as the venting of individual anger or a characteristic trait of the violent person. Stewart makes it pointedly clear that such opinions are fallacious. According to her, women will continue to be abused flagrantly so long as they do not enjoy equal socio-political and economic power as men. Many atrocities are being committed the world over by the patriarchal society against women. She labels such acts against women as acts of terrorism. She cites female infanticide, bride burning, female genital mutilation, sex slavery and circumcision as acts of terrorism against women.

Feminist literary criticism, particularly, modern critics began in America in 1968 with the publication of the book by Mary Ellman entitled *Thinking about Women* (1968). Her interest in feminist studies is evident in her candid admission in the preface of the book: “*I am most interested in woman as words.*” It is through her literary analysis that she takes up the historical and political implications of patriarchy. Kate Millett’s polemic becomes limpidly clear in *Sexual Politics* (1969). In her terminology, sexual politics is the process by which the dominant sex (the male sex) extends its power over the weaker sex (the female sex). The domination of man over woman, according to her, is possible in western societies where the institution employs secret methods in manipulating power so that domination of man over woman continues unabatedly. According to Millett, a woman is oppressed not on account of her biological state but owing to the social construct of femininity. She arraigns the patriarchal authority because, in her opinion it is patriarchy that has reduced her to a minor. A woman is so afflicted by the thought of her minority status that her mind is full of “self-hatred and self-rejection, contempt both for herself and her fellows.” Freud had created a sensation by his theory of ‘*phallus envy*’. Millett opposes the theory of Freud by her convincing logic. Girls in her opinion do not envy the penis, but envy all that the penis stands for in a phallocratic world.

Many feminist theorists of the seventies of the twentieth century engaged themselves in a re-reading of literature and they furnished proof of their profound reading in their works. The first name that figures in our minds is none other than that of Patricia Myer Spacks. Her

book, *The Female Imagination* (1975) was a study of the English and American novels of the past three hundred years. Close on the heels of the book of Spacks emerged another book entitled, *Literary Women* (1976). Authored by Ellen Moers, the book is more comprehensive in the sense that Moers' study is not merely confined to a study of the novelists of England and America, it includes examination of the work of the poets as well. Other books on feminist theories which have universal acclaim are Elaine Showalter's *A Literature of Their Own: British Woman Novelists from Bronte to Lessing* (1977) and Sandra Gilbert and Susan Gubar's *The Mad Woman in The Attic* and *No Man's Land: The Place of Woman Writer in The Twentieth Century* (1988). These entire feminist writers try to uphold the female tradition or 'sub-culture' as they try to define that tradition.

Elaine Showalter in *A Literature of Their Own: British Woman Novelists from Bronte to Lessing* (1977) describes three phases of the literary development. The first phase which she labels the 'feminist' phase spans the period 1840-1880. This was the period during which woman wrote primarily in imitation of masculine models but their concerns were distinctly feminine. The second phase (1880-1920) was a period marked by feminine protests and demands. The third phase could broadly be described as the 'female' phase spanning from 1920 to till the present. In the current period, women theories move towards discoveries of inner space for women. In this work of epic dimension, she brings to light the works of the neglected women writers. Sandra Gilbert and Sandra Gubar's *The Mad Woman in The Attic* (1979) can best be described as a monumental piece of work. Gilbert and Gubar make an exhaustive treatment of the major women writers of nineteenth century belonging to different decades: Jane Austen, Mary Shirley, Charlotte Bronte, George Eliot, Christiana Rossetti, Elizabeth Browning and Emily Dickinson. These feminist theorists take within the purview of their study the literary activities of the women writers with their discerning minds.

Mary Wollstonecraft supports and demands the women's education in her book, *A Vindication of The Rights of Women* (1792) to improve the aspects of her social role and to increase rationality by using logical arguments. According to her, women education can change the face of society. Women should be encouraged to develop their own talents and interests. The personality of a woman, her beliefs and morals along with her intelligence, character, humor, grace and energy are the crux of her desirability.

She discusses that an educated women can be a better companion to man and a fit mother capable to educate her children. Wollstonecraft accepts the role of women as wife and mother; she accepts her culturally appointed gender role, but hopes to reform the ideals.

Virginia Woolf has presented the idea of women to be financially strong and independent. In *A Room Of One's Own* (1929), she addresses female audience and speaks to women's status in literature, economic sphere and the psychology of anger. She advises women to obtain wealth and a room for themselves to attain creative freedom.

In the *Second Sex*, Simone De Beauvoir writes, "Few tasks are more like the torture of Sisypus than housework, with its endless repetition: the clean becomes soiled, the soiled is made clean, over and over, day after day." Domestic work, for De Beauvoir, is a negative and stultifying pursuit that 'provides no escape from immanence and little affirmation of

individuality' (470). Similar basic assumption pervades much of the subsequent second wave feminist discourse on domesticity. Shields views on feminism can be said to be the balance of Wollstonecraft and Virginia Woolf.

In *The Second Sex*, De Beauvoir has asked some question such as: *What is a woman?* And provides the simplistic answer that woman is a womb! It means that a woman is just a machine to bear children. They don't have any importance of their own. She totally rejects this aspect and considers woman as a powerful word. She wants that woman should be treated as human beings.

The terms masculine and feminine are used symmetrically only as a matter of form, as on legal papers. In reality, the relation of the two sexes is not quite like that of two electrical poles, for man represents both the positive and the neutral, as is indicated by the common use of men to designate human beings in general; whereas woman represents only the negative, defined by limiting criteria, without reciprocity. Woman has ovaries, a uterus: these peculiarities imprison her in her subjectivity, circumscribe her within the limits of her own nature. Man thinks of his body as a direct and normal connection with the world, which he believes he apprehends objectively, whereas he regards the body of woman as a hindrance, a prison, weighed down by everything peculiar to it. "The female is a female by virtue of a certain lack of qualities", said Aristotle, 'we should regard the female nature as afflicted with a natural defectiveness'. And St Thomas for his part pronounced woman to be an imperfect man, an incidental being which is symbolized in Genesis where Eve is depicted as being made from what Bossuet called a supernumerary bone of Adam. Thus humanity is male and man defines woman not in herself but as relative to him; she is not regarded as an autonomous being.

Next, De Beauvoir says that woman efforts have never been anything more than a symbolic agitation what men have been willing to grant, they have taken nothing, they have only received. De Beauvoir criticizes Plato also as the first among the blessings for which Plato thanked the gods was that he had been created free, not enslaved the second, a man, not a woman.

In *The Second Sex* Simon De Beauvoir has said, "One is not born, but rather becomes a woman". It means that women are different from men because of what they have been taught and socialized to and be. She considers "motherhood" a way of turning woman into slaves. Because when a woman becomes a mother she is forced to concern themselves with their divine nature. They were compelled to focus on motherhood not in politics, technology or anything else outside of home and family. "Given that one can hardly tell women that washing up saucepans is their divine mission, they are told that bringing up children is their divine mission.(Simon De Beauvoir, 1982).

From Beauvoir's point of view, the work of feminism was to transform society and women's place in it.

On the other hand, Shields point of view is that a woman should not ignore her ideal role of a wife and a mother but she should have right to make her own place and identity in the world. In the novel *Unless*, Shields has also taken this aspect of independence of economic condition of women. *Unless* can be considered as most explicit feminist novel of Shields.

Shields has discussed the social role of a women in a society. She does not agree with second wave analyses of domesticity.

Shields has used the theme of immanence and transcendence in *Unless* by her character Reta Winter. "Immanence", she describes as the historic domain assigned to woman: a closed-off realm where woman are interior, passive, static and immersed in them. 'Transcendence' describes male lot: active, creative, productive, powerful, extending outward into the external universe. Every human life should have a balance of these two forces. But from the ancient time, women are deprived of 'Transcendence'. Women can possess only immanence role.

The main protagonist of the novel "*Unless*", Reta epitomizes the idea of goodness vs. greatness of De Beauvoir as immanence and transcendence. The main concern of Reta is to know the reason of her daughter's decision to desert her from family and society. The separation of her daughter is very painful for her. Norah, her dearest and intelligent daughter among her three daughters, suddenly leaves her life and family and sits on a Toronto street corner wearing a sign of goodness. Reta thinks that Norah is the embodiment of female powerlessness, and her speculation on the causes of Norah's self-destruction nearly consumes her.

Reta is a writer in this novel. She not only rewrites the reality of woman but also tries to bring a new understanding of realities of what is good for women. She compares goodness and greatness that is closely related to De Beauvoir's 'Expansion of existence or transcendence'.

Unless is composed of thirty-seven brief chapters related to Reta Winter's life- her home, her family, her friends, her work. Each chapter has a title-words like once, nearly, only, hardly, hence and nevertheless. These all words signify an event of her life.

"Unless you're lucky, unless you're healthy, fertile, unless you're loved and fed, unless you are clear about your sexual direction, unless you're offered what others are offered, you go down into the darkness, down to despair(*Unless*,p. 224). These lines are a glimpse of the feminist aspects in the novel.

Reta writes letters to the authors and excluded women writers from the name of scholar and the world's greatest to show the absence of women in society. Reta is inspired by her original editor, the suitably named Mr. Scribano, to write a sequel to her first novel, "*The Art of Diversion*" (*Unless*,p. 23), the story of Alicia, a fashion editor, and Romanian Albanian trombonist. She finds that "Alicia was not as happy as she deserved to be"(*Unless*,p. 15). Reta changes her story of novel due to the condition of Norah. Reta wanted to have happy ending and "happy endings are her specialty"(*Unless*,p. 38). But she thinks that marriage may not be happy ending in novel for Alicia. She recalls, "Norah, the most literary, the most mercurial of the three..... mumbled that[My Thyme is Up] might have been a better book if I'd skipped the happy ending, if Alicia had decided on going to Paris after all, and if Roman had denied her his affection. There was, my daughter postulated, may be too much over the top sweetness in thyme seeds Alicia planted in her widow box (*Unless*,p . 81).

And at last she decides to cancel the 'doomed wedding' planned for 'Thyme in Bloom'.

Norah returns to her home and Reta's pain and wounds of separation recovers. Reta plans to write "Thyme" trilogy as '*Autumn Thyme*' and want to give a powerful characterization of

Alicia as follow: *Alicia is intelligent and inventive and capable of moral resolution, the same qualities we presume, without demonstration, in a male hero.*

The word ‘Autumn’ taps us on the head, whispering melancholy, brevity, which are tunes I know a little about. A certain amount of resignation too will attach itself to the pages of this third novel, a gift from Da Nielle Westernman, but also the left of stamina..... (*Unless*,p. 320).

Reta Winter’s recollects of Helen Reddy’s song, “*I Am Woman*” (*Unless*,p. 57) from the early sixties, when “feminism was in its chrysalis stage” (*Unless*,p. 59), also depicts the feminine underpinning of the novel. Goodness versus greatness depiction raises the issue of morality versus power.

Again, Reta thinks that “the world is split in two, between those who are handed power at birth, at gestation, encoded with a seemingly random chromosome determinate that says yes for ever and ever, and those like Norah, like Danielle Westerman, like my mother, like my mother-in-law, like me, like all of us who fall into the uncoded otherness in which the power to assert ourselves and claim our lives has been displaced by a compulsion to shut down our bodies and seal our mouths and be as nothing against the fireworks and streaking stars and blinding light of the big bang(*Unless*,p. 270). Thus Reta’s views show the powerlessness of women while felling the pangs at Norah’s loss.

Reta also examines the burning issues of nineteenth century novels, such as George Elliot’s *Middlemarch* (1871-72), Charlotte Bronte’s *Jane Eyre*(1847), or Leo Tolstoy’s *Anna Karenina* (1873-77) in the chapter “The Woman Question”(*Unless*,p. 100). In the next chapter she says, “I need to speak further about this problem of women how they are dismissed and excluded from the most primary of entitlements” (*Unless*,p. 99). Instead, we’ve been sent over to the side pocket of the snooker table and made to disappear. No one is blind as not to realize the power of the strong over the weak and, following that, the likelihood of defeat” (*Unless*,p. 99). Norah compares woman’s life as black hole in the masculine game of pool, where female power is determined in patriarchal culture.

Thus it can be said that the *Unless* is a novel which deals with multiple aspects of feminism. We can sum up the theme of feminism weaved in the Shield’ novel, by quoting Swami Vivekanada :

“The idea of perfect womanhood is perfect independence” (1893).

WORKS CITED

1. Beauvoir, de Simone (1972). *The Second Sex*. Harmondsworth : Penguin.
2. Ellamann, Marry (1968). *Thinking about Women*. New York: Hartcourt.
3. Friedan, Betty (1963). *The Feminine Mystique*. New York: W.W.Norton & Company:
4. Gilbert,Sandra and Gubar, Susan (1979). *The Mad Woman in the Attic: The Woman Writer and the Nineteenth Century Literary Imagination*. New Haven and London: Yale University Press.

5. Greer, Germaine (1993). *The Female Eunuch*. London: Paladin.
6. Millett, Kate (1969). *Sexual Politics*. London: Rupert Hart-Davis Ltd.
7. Moers, Ellen (1976). *Literary Women*. New York: Anchor Books.
8. Rich, Adrienne (1996). *Of Woman Born: Motherhood as experience and institution*, Singapore: Harvester Wheatsheaf.
9. Sage, Lorna (1992). *Women in the House of Fiction*. London: Macmillan Press.
10. Shields, Ann Carol (2006). *Unless*. London: Harper Perennial.
11. Showalter, Ellaine (1977). *A Literature Of Their Own: British Women Novelists from Bronte to Lessing*. Princeton : Princeton University Press:.
12. Stewart White Mary (2002). *Ordinary Violence: Everyday Assaults Against Women*. Westport CT: Bergin & Gravey.
13. Woolf, Virginia (1928). *A Room Of One's Own*. London: Penguin Books.

TREATMENT OF WOMEN AS SLAVES IN VIJAY TENDULKAR'S 'KAMALA'

Shikha Goyal*

Dr. Mohd. Nazzar**

ABSTRACT

Kamala is a naturalistic play which is inspired by a real-life incident. Ashwin Sarin, a correspondent of The Indian Express actually buys a girl from a rural flesh market of village Shivpuri in M.P. for Rs. 2,300/- and presents her at a press conference. He then wrote series of articles in May, 1981 in the Indian Express. Vijay Tendulkar(1928-2008), the doyen of Marathi literature and a master drama-writer uses the play to dwell on the characteristic sufferings of the Indian middle class woman made to suffer by selfish, malicious and hypocritical male chauvinists. He presents his ideas about womanhood and proposes a feminist ideology which pits women in direct encounter with chauvinistic male oppressors. The playwright has intentionally given the women characters – Sarita and Kamala - a greater variety and depth . Kamala's bold conversation with Sarita and then Sarita's confident and assertive utterances towards the end of the play show that both have emerged as strong women, which Tendulkar wanted every Indian woman to be.

Keywords: Flesh market, Kamla, patriarchy, Press conference, Sarita.

INTRODUCTION

Vijay Tendulkar (1928-2008) is undeniably a great Indian playwright who is known for his multifaceted creative genius. As a versatile and prolific Marathi writer he has authored twenty-eight full length dramas, twenty-four one-act plays, and eleven plays for children. Besides being an acclaimed dramatist he is well-known for his literary essays, political journalism, screen and television writings, translated works and social commentaries. He has also written novels and several short stories. Despite his interest and involvement in different social, political and literary activities his genius finds full expression only in dramas. For his vast dramatic output and *avant-garde* theatrical activities in Marathi, he has been honoured with several prestigious awards including the Maharashtra State Government Award, the Sangeet Natak Akademy Award, Padma Bhushan Award and the Katha Chudamani Award. His writing

*Shikha Goyal is a Research Scholar at Mewar University, Gangrar, Chittorgarh, Rajasthan

**Dr. Mohd. Nazzar is Associate Professor at MMH College, Ghaziabad, U.P., India.

career has spanned more than fifty years and several of his plays have, in fact, become true classics in Marathi and they have been translated into English and other Indian languages.

In the history of contemporary theatre, Tendulkar has a place which is unique. As a playwright, he is different from other playwrights because of his experimentation with the subject matter. Vijay Tendulkar's innovative dramatic techniques and experimental methods in the presentation of varied themes have provided to the highly orthodox Marathi theatre a new authenticity and power. Though his treatment of socially controversial themes and unconventional approach to human problems in his plays has made him a controversial writer, he has been acclaimed as a writer of realistic dramas, for he electrifies the conservative audiences with brutal themes and forthright dialogues. As a sensitive writer, he minutely observes the moral degeneration that has cropped up in the political and cultural life of the contemporary society, and presents it in his plays with thorough detachment and clinical objectivity.

As a writer, he focuses on the violent exploited-exploiter relationship and explores it deeply. He comes to the conclusion that this relationship is a cruel fact of life and is eternal and will never come to an end, particularly in the case of women whose position in the contemporary society is very dismal. And so, like most of the contemporary writers, he trains his critical gaze on the miserable plight of women who are the victim of the institutional body of powers in the contemporary society. In his view, woman has become a commodity of male gaze and is a victim who is subjected to violence both physically or emotionally. The women characters in Tendulkar's dramas suffer a lot as the victims of the hegemonic power structure. The female body is the object of male sexual fantasy and desire. All women characters in his plays are the marginalized objects in interlocking system of sexual politics and power politics

Vijay Tendulkar's play *Kamala* is a naturalistic play which is inspired by a real-life incident – *The Indian Express* expose by Ashwin Sarin, who actually buys a girl from a rural flesh market and presents at a press conference. (Banerjee, Arundhati, p. xvi). Sarin while investigating into the flesh trade that flourished in Madhya Pradesh, purchased a woman by name Kamla from village Shivpuri in M.P. for Rs. 2,300/-. He then wrote series of articles which were published by in the Indian Express on 27th, 29th and 30th April, 1981 and 2nd May 1981. The article published in the issue of 27th April, 1981 had the heading '*Buying girls from circuit house*'. The woman Kamla was brought to New Delhi. This article opened with following words:

"Yesterday, I bought a short-statured skinny woman belonging to a village near Shivapuri in Madhya Pradesh for Rs. 2,300/-. Even I find it hard to believe that I have returned to the Capital this morning buying this middle aged woman for half the price one pays for a buffalo in Punjab."

The story caused a national furore. Vijay Tendulkar described the plight of Kamla through this play. In this play, Vijay Tendulkar deals with the general plight of women who are oppressed and exploited everywhere in society. They are treated as slaves in male dominated society. Tribal women are bought and sold in the flesh market as slaves to be exploited sexually. Tendulkar uses the play to dwell on the characteristic sufferings of the Indian middle class woman made to suffer by selfish, malicious and hypocritical male chauvinists. He expresses his concern on

the exploitation of women as well as women's victimization by male-dominated society.

Vijay Tendulkar's *Kamala* delineates women as objects of commodity which can be purchased, bartered and sold. Jaisingh Jadhav, a young journalist working as an associate editor in English language daily, goes to Ludhardaga beyond Ranchi and buys a woman named Kamala for Rs 250 at a flesh market where women of all kinds are auctioned openly. He brings her to Delhi and keeps her in his house to present her at a press conference in the evening in order to expose the inhuman trade which is rampant even in the remote villages of India. However, Kamala does not know that Jadhav is going to present her at the 'Press Conference'; she is in the impression that Jadhav has bought her to keep her in his house as his mistress. Jadhav keeps it secret even from his best friend Jain who just visits him in the forenoon. Individualism and competition of his profession demands it. Jain who knows the hardships of Sarita, Jaisingh's wife, mocks the idea of purchasing a woman as it enslaves a woman. He remarks: "Shame on you! Hero of anti-exploitation campaigns makes slave of wife" (*Collected Plays*, p. 17) and calls Sarita "lovely bonded labourer" while saying 'Bye' (*Collected Plays*, p.17). This is a hint at Sarita's position in the family. Sarita is indeed a 'lovely bonded labourer', taking note of all phone calls, attending to all Jadhav's physical needs and running about in the house carrying out all his presumptuous instructions. Sarita is stunned at the news that Jadhav has bought Kamala and reacts in the following manner:

JAISINGH...They sell human beings...They have an open auction for women of all sorts of ages. People come from long distances to make their bids.

SARITA. They auction – women?

JAISINGH. Yes, women. Can't believe it, can you? The men who want to bid - handle the women to inspect them. Whether they are firm or flabby. Young or old. Healthy or diseased. How they feel in the breast, in their waist, in their thighs and...

SARITA. Enough.

(*Collected Plays*, p. 14)

Sarita becomes furious and asks Jadhav to stop. Jadhav warns her not to tell anyone that he is going to exhibit Kamala at the 'Press Conference':

What's so unusual about the Luhardaga flesh market? Women are sold in many places like that, all over the country...See how we'll blast out this shameful affair. There'll be high drama at today's press conference. It'll create uproar!

(*Collected Plays*, p. 15).

When Sarita asks him whether she should ask Kamala to bathe and put on a fresh sari, Jadhav stops her:

No...she can have bath tonight or tomorrow morning...she'll feel dirtier after her bath. Please don't do anything concerning her without asking me first. For God's sake!...Just let this evening's Press Conference get over. It's very important.

(*Collected Plays*, p. 18)

When the time of the press conference comes close, Jadhav talks to Kamala politely so that she may agree to go to the conference:

JAISINGH. How do you like it here, Kamala?

KAMALA. Very much, Sahib.

JAISINGH. Kamala, this evening we're going out together.

KAMALA. Oh! I'll see Bombay! They say it's a very big city.

JAISINGH. There's going to be a big feast where we are going.

KAMALA. Why, is there a Krishna temple there?

(*Collected Plays*, p. 19)

This shows that Kamala is an ignorant and illiterate girl who does not know that she is in Delhi, not in Bombay. She tells Jadhav that she cannot go with him in her rags. Jadhav, hardening his voice tells her: "You will *have* to come, Kamala." (*Collected Plays*, p. 20) Finally Kamala agrees to go with him to the press conference in her rags.

Kakasaheb, Sarita's uncle who runs a paper, expresses his apprehension of Jadhav's predicament, and so warns him of the possible future danger: "You may be caught in a terrible jam some time." (*Collected Plays*, p. 10) Kakasaheb tries to convince him that it is dangerous for him:

...the situation's different now. And your attacks are on different people everyday... Aren't you going to look at where all this is leading? What's going to be the outcome of it all? And on top of that – you're not prepared to take care to protect yourself.

(*Collected Plays*, p. 11)

However, Jadhav is not convinced as he is under the illusion that he is fighting through press against exploitation and oppression. He also hopes that his employer is there to protect him:

They can still prosecute me? Let them proceed. That'll make a nice front- page item... We'll make them dance like monkeys this time! Oh no, not just me, it was the whole team. All of us. All because of your support. Thank you... Yes, he can sack me. I am not worried. Why should I worry, when you are with me, Jaspalsaab?

(*Collected Plays*, p. 9)

When Sarita also expresses her apprehension of his going to jail, he says:

I don't mind. My editor is going to fight this case right up to the Supreme Court. That'll give a lot of publicity to this problem. And I probably won't be sentenced – because we've safeguarded ourselves legally. We gave a lot of thought to the plan.

(*Collected Plays*, p. 26)

Anyhow Jadhav meticulously executes his plan and succeeds wonderfully at the press conference in exposing the inhuman trade by presenting Kamala as a proof. During the press conference, Kamala gets embarrassed at certain unpleasant questions. But Jadhav lacks the faculties of intuition and nurturing in this context and does not take notice of Kamala's

embarrassment. He and Jain are over-excited on their success and get drunk. Kakasaheb watches them in silent amusement. However, very soon, he gets so displeased at the happenings in the conference that he exclaims: “this is your Press Conference!” (*Collected Plays*, p. 29). Sarita and Kakasaheb feel very sorry for Kamala. Sarita even refuses to sleep with Jadhav that night because she is too much disturbed. When she talks to Kamala, she is herself taken aback at Kamala’s questions:

KAMALA. How much did he buy you for?

[*Sarita is confused at first.*]

SARITA. What?

KAMALA. I said, how much did he buy you for?

SARITA. [*Recovering*]. Me? Look here, Kamala. [*Changes her mind, and sits down beside her.*] For seven hundred.

KAMALA. My god! Seven hundred?

SARITA. Why? Was it too little?

KAMALA. [*Pauses*]. It was an expensive bargain, memsahib. If you pay seven hundred, and there are no children...

(*Collected Plays*, p. 34)

Kamala’s questions open Sarita’s eyes suddenly and, for the first time, she finds no difference between herself and Kamala whom her husband has brought to get success in his journalism. Only women understand the problems of women, a fact that emerges from the frank and unreserved conversation between Sarita and Kamala. Kamala, though naïve, ignorant and illiterate, sympathizes with Sarita over her barrenness.

This unexpected revelation enlightens Sarita on her position in the house. Though Jadhav had been given a handsome dowry in marrying her, her position remains in the family like that of a slave:

Memsahib, if you won’t misunderstand, I’ll tell you. The master bought you; he bought me, too...So, memsahib, both of us must stay here like sister. We’ll keep the master happy... The master will have children. I’ll do the hard work, and I’ll bring forth the children. I’ll bring them up. You keep the accounts and run the house...Fifteen days of the month, you sleep with the master, the other fifteen, I’ll sleep with him. Agreed?

(*Collected Plays*, p. 35)

And so when Kamala proposes to do all the housework while Sarita will look after accounts and such other sophisticated things, Kamala also goes on to add that each of them will share their master’s bed half a month each.

The brief conversation between Kamala and Sarita develops a better understanding between them and makes Sarita aware of her position in the family. She now realizes that her husband does not have much difference between her and Kamala. That Jadhav uses her as a mere object to satisfy his own carnal desire, and as an object to parade his own status in the capacity of his wife at parties. When Jadhav returns from the ‘Nari Niketan’, he asks Sarita to accompany him to a party. At this she refuses to do so:

JAISINGH. [*Growling*]. It's seven. Go, get dressed, quickly.
[*Sarita doesn't get up*]...Don't you want to come to the party?
SARITA. No.
JAISINGH. You don't want to come? Why?
SARITA. That's my will.
JAISINGH. [*Rather surprised*]. Your will?
SARITA. Aren't I allowed to have a will of my own?

(*Collected Plays*, pp. 44-45)

Sarita arranges a press conference to tell everyone about the predicament of women in the contemporary Indian society. She confesses Kamala's help to comprehend the master-slave relationship:

I am going to present a man who in the year 1982 still keeps a slave, right here in Delhi. Jaisingh Jadhav. I'm going to say: this man's a great advocate of freedom. And he brings home a slave and exploits her. He doesn't consider a slave a human being – just a useful object. One you can use and throw away. He gets people to call him a sworn enemy of tyranny. But he tyrannizes his own slave as much as he likes, and doesn't think anything of it – nothing at all. Listen to the story of how he bought the slave Kamala and made use of her. The other slave he got free – not just free – the slave's father shelled out the money – a big sum. Ask him what he did with it. [*An uncontrollable sob bursts from her. She controls it.*] Sorry.

(*Collected Plays*, p. 46)

A determination to live on her own comes to her and any argument put forward by Kakasaheb fails to repress her fury against male domination. When he asks her why she suddenly began to think like this in a different way, Sarita responds:

Why did I, you ask? I was asleep. I was unconscious even when I was awake. Kamala woke me up. With a shock. Kamala showed me everything. Because of her, I suddenly saw things clearly. I saw that the man I thought my partner was the master of slave. I have no rights at all in this house. Because I'm a slave. Slaves don't have rights, do they, Kakasaheb? They must slave away. Dance to their master's whim. Laugh, when he says, laugh. Cry, when he says, cry. When he says pick up the phone, they must pick it up. When he says, come to a party, they must go. When he says, lie on the bed – they [*She is twisted in pain.*]

(*Collected Plays*, p. 46)

When Kakasaheb tries to pacify Sarita by saying that the world goes on in this way through marriage, Sarita screams at him in impatience:

Why? Why can't men limp behind? Why aren't women ever the masters? Why can't a woman at least ask to live her life the same way as a man? Why must only a man have the right to be a man? Does he have one extra sense? A woman can do everything a man can... What a man does is manhood. Even if he washes people's dishes that are manhood... This must be changed. Those who do manly things should be equal to men. Those who don't, are women.

(*Collected Plays*, p. 47)

This shows how women's desires are repressed under the onslaught of reactionary ideas of the fundamentally orthodox society. It also displays how women are disrupted to do certain things. She cannot talk freely, walk freely and live freely. If she does this, something unfortunate occurs and this misfortune inevitably falls upon her head. This must change. Sarita has now come to know the reality of marriage and husband-wife relationship:

I'll go on feeling it...a day will come, Kakasaheb, when I will stop being a slave. I'll no longer be an object to be used and thrown away. I'll do what I wish, and no one will rule over me. That day has to come. And I'll pay whatever price I have to pay for it.

(*Collected Plays*, 52).

Thus, Sarita emerges as a woman who fights against her exploitation though the right of equality is denied to her.

In the play *Kamala* we find Jadhav is indifferent to humanness and is incapable of humanity itself. The husband-wife relationship between Jaising and Sarita is typical of the sort existing in the cities like Mumbai, where husbands, having been in employment do not have enough time for their wives and kids and therefore they have to content themselves by being mere social beings. Kamala is treated as an object and she has to serve her role as the male-dominated society wants. Through Kamala and Sarita, Tendulkar expresses the male-chauvinistic spirit where male believes in liberty of themselves and at the same time they try to suppress the voice of women in the society either by force or trickery. Tendulkar suggests that exploitation of women in male-dominated Indian society is a perpetual process in the past and coming future. Kakasaheb also is a part of that patriarchal society as he forces his wife to follow him silently without any grudge.

Thus it can be safely concluded that the principal action of the play *Kamala* revolves around women. Sarita and Kamala stand for the consciousness in the play beyond any doubt. Hence, the play can be rightly called women-centric. Through the delineation of women characters, Tendulkar projects a point of view that peculiarly feminine-tending to be even feminist – as the entire denouement in the play bears it out. In this women-centered play, Vijay Tendulkar presents his full and free expression of his feminist ideology which pits women in direct encounter with chauvinistic male oppressors. The playwright has intentionally given the women characters – Sarita and Kamala – a greater variety and depth – and thus a definite edge, over – to their male counterpart. Kamala's bold conversation with Sarita and then Sarita's confident and assertive utterances towards the end of the play show that both have emerged as strong women.

REFERENCE

1. Tendulkar, Vijay (2007). *Collected Plays*. New Delhi: Oxford University Press.

SUBMISSION GUIDELINES

Journal of Indian Research accepts manuscripts of 10-25 double spaced pages (font should be Times New Roman 12) including references and notes. The journal publishes theory-based and critical essays of the highest quality and book reviews in English. All papers are peer-reviewed by peers who are active in the relevant fields of research. Articles should be sent to jir@mewaruniversity.org.

Submission of Typescripts

Contributors are requested to follow the Guidelines given below:-

The paper should be composed using MS Word 6.0 and above. An Abstract of about 100 words should be included to describe the main argument and the conclusions of the paper. The Abstract cannot contain endnote references.

The first sheet should carry details of the author's biodata (a brief resume of about 50 words), institutional affiliation, and the mailing address.

A signed declaration of originality and conformance to research ethics by the scholar should accompany the paper; also, that the paper has not been sent to any other journal for publication. The ongoing PhD scholar must submit a signed declaration from research guide also, on the abovementioned aspect.

All diagrams, charts and graphs should be referred to as Figures and consecutively numbered (Fig.1, Fig.2, and so on). Tables should carry only essential data and should complement the text. They should carry the source at the bottom. Each table must be referenced in the text.

If actual statements or phrases are taken from another paper, the name of the author should be mentioned in the text and the chosen material should be placed within quotation marks with an appropriate reference. Author's acknowledgement(s) may be included at the end of the paper and before References/Endnotes begin.

Write dates by beginning with the date, followed by the month and the year (e.g.: 2 October, 1869).

In the text, write numbers in words till the number nine and then in numerals (e.g.: two, four, nine; then 10, 11, 12 and so on).

Names of books, journals, newspapers and foreign terms in the body of the text should appear in italics.

References/Endnotes should be sequentially numbered.

The authors are responsible for accuracy of the references.

While referring to book, follow the example below:-

Byrne, James (1885). *General Principles of the Structure of Language* (2 volumes). London: Trübner and Company.

While referring to article, follow the example below:-

Driem, George van (2013). East Asian Ethnolinguistic Phylogeography, *Bulletin of Chinese Linguistics*, 7(1):1-55.

SUBSCRIPTION DETAILS

Subscription Rate of Journal of Indian Research

- ☐ Single Copy -Rs. 300/- ☐ Annual (4 Issue) -Rs. 1000/-
Cheques/DD/Cash payable to "Mewar University"

Camp office : Sector-4C, Vasundhara, Delhi-Gzb. Link Road,
Ghaziabad-201012 (U.P.) **Phone :** 0120-4758300

E-mail: jir@mewaruniversity.org, **Website :** <http://mujournal.mewaruniversity.in>

