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ANVESHANA ... *Search for Knowledge*

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Foreword…

Education is the most powerful weapon which one can use to change the world and hence, the future of a nation depends on the quality of educational institutions in that country. In this backdrop, quality teaching supported by excellent infrastructure completes the first half of the institutional responsibilities and quality research and publication fulfills the next half.

Having understood this facet, A. J. Institute of Management is bringing out its bi-annual institutional journal 'Anveshana' with ISSN, comprising conceptual papers, research articles, empirical reports, and book reviews of renowned scholars. Hence, I am pleased to place before the learned readers the Volume 3 and Number 1 of 'Anveshana' with scholarly papers such as

- "Changing Perceptives and Emerging Challenges for Management Track: Human Resource Management" authored by Dr Priyanka Banerji.
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J. Jayaprakash Rao

Dr T Jayaprakash Rao
Editor-in-Chief

Changing Perspectives and Emerging Challenges for Management Track: Human Resource Management

*** Dr. Priyanka Banerji**

Abstract

'Human Resource' is the greatest asset of any organization. Organizations are at par because of HR(Human Resource) philosophies. In today's chaotic time, retaining faith in HR has not only become difficult but also important. Along with other components of business, recently HRM (Human Resource Management) has also become highly complex.

In today's rapidly changing world, things are changing overnight. So it is really difficult to tell what will happen next .But HR professionals can not afford to wait for change to occur. HR leaders must be hopeful of new developments clinch them and develop the strategies necessary for their organizations to succeed. In organizations, it is important to determine both current and future organizational requirements for both core employees and the dependent workforce in terms of their skills/technical abilities, competencies, flexibility etc. The analysis requires consideration of the internal and external factors that can have an effect on the resourcing, development, motivation and retention of employees and other workers.

This paper aims at discovering opportunities and challenges in contemporary trends in HRM.

Key words : *Human Resource Management, TQM, BPO, Continuous Leadership*

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Introduction

The advent of the era of globalization and liberalization, with the elevated speed achievements of Information Technology, has transformed the whole world around us. It has made Human Resource a centre of attraction, more than ever before. Globalization has witnessed the problems related deregulation of markets, outsourcing of production, uneven service facilities etc., particularly to China and India.

HRM is a process of bringing people and organizations together so that the goals of each other are met. The role of HR executive is shifting from that of a defender and screener to the character of a plotter and revolutionize mediator. Workforce directors are the innovative communal heroes. The name of the game nowadays in industry is human resources. At the present time it is not feasible to show a good pecuniary (financial) or working report unless your personnel associations are in array.

Over the years, highly practised and comprehension based jobs are escalating while low practised jobs are diminishing. Indian organizations are also witnessing an alteration in systems, management cultures and beliefs due to the universal configuration of Indian organizations. There is a need for multi expertise expansion. Function of Human Resource Management is fetching all the more important.

Human resource is a term used to describe the individuals who make up or innovate the workforce of an organization. The concept of HRM implies that employees are the resources of employer. Human Resources refer to a function within an organization charged with the overall responsibility for implementing strategies and policies relating to the management of individuals (i.e., the Human Resource Management of the organization).

There is an old saying that in hi-tech organization of the future, there will be only two mammals be running the entire organization…a human and a dog. The duty of the human will be to feed the dog and the dog will guard that person and does not touch anything.

Human resource is a relatively modern management term, coined as late as the 1960s. The origins of the function arose in organizations that introduced 'welfare management' practices and also in those that adopted the principles of 'scientific management'. From these terms emerged a largely administrative management activity, coordinating a range of worker related processes and becoming known, in time, as the 'personnel function'. Human resources progressively became the more usual name for this function, in the first instance in the United States as well as multinational or international corporations, reflecting the adoption of a more quantitative as well as tactical approach to personnel management, demanded by corporate management to gain a competitive advantage, utilizing limited skilled and highly practiced workers.

A small sampling of recent issues includes the following:

- Loss of manufacturing, service, and technical jobs, either through global outsourcing, productivity gains or shifts in the economy.
- Organizational restructuring and redirection.
- Ethics of corporate leaders and corporate employees.
- Benefits, particularly social security and health care.
- Corporate mergers.

With these points, we can come to a small but deep conclusion, that HR is interesting on one side and complex on the other.

In the past, there was a saying that one day machines will eliminate human labor, but in reality, human labor is more important in today's organization than ever before.

Table 1: Evolution of HRM

Time period	HR Focus	HR Activity	Example Event
Before 1890	Industrial technologies	Disciplinary systems	-
1900-1910	Employee well-being	Health and safety programs	National Cash Register (NCR) forms first personnel department to handle employee issues
1920s	Task design, efficiency, and impact of work groups on individual workers	Time and motion studies Employee counseling and testing	Period of scientific management
1930s	Unionization of workplace Passage of major labor laws	Communication programs Anti-union campaigns Personnel becomes staff support to operational line units	Major labor relations legislation: Norris-LaGuardia Act National Labor Relations Act (Wagner Act)
1940s	Employee benefits and compensation	Wage increases Cost-of-living adjustments Pension, health and other benefit plans	General Motors and the United Auto Workers sign first contract with "escalator" clause
1950s	Employee relations Specialized personnel functions	Training and development Separate divisions within personnel established: recruitment labor relations, training, benefits, etc.	The Hawthrone studies from the human relations movement find widespread applicability.
1960s	Employee participation	Employee involvement Management by objectives, quality circles, sensitivity training	Peter Drucker's encyclopedic The Practice of Management (1954) finds widespread applicability.

1970s	Government intervention	Employee rights issues now regulated in areas of discrimination, equal opportunity, safety and health and various benefit reforms	Griggs v. Duke Power is the first U.S. Supreme Court employment discrimination case.
1980s	Employee recognition Displacement	Enrichment of employee knowledge, skills and abilities through: job rotation, formation of integrated task teams and outplacement	William Ouchi's Theory Z examines the applicability of Japanese employment practices to Western companies
1990s	Changing demographics of work force Technology	Diversity programs Employees rights issues Global perspective Information Technology	About 70 per cent of married women are employed, more than double the 1960 rate.
2000 and beyond	Strategic HR planning	Transition from service and support to consultative and leadership role	Exemplified by David Ulrich's book Human Resource Champions, which examines the role of HRM in the 21st century.

Purpose and Significance

In a lay man's language, the strategy of an organization's human resource management should be to maximize return on investment in the organization's human capital and minimize pecuniary risk. Human resource managers try to achieve this task by successfully utilizing the supply of practiced and qualified individuals and the capabilities of the current personnel, with the organizations ongoing and future business plans and requirements to maximize return on investment and secure future continued existence and success.

HR professionals are intensely aware of the changes taking place within the profession itself. In its strategic leadership role, HR must deal with more intricacy in its areas of responsibility and must find ways to measure the value of human capital and make obvious its return on investment.

To drive organizational success, HR professionals must understand the implications of these trends not only for HR, but also for their organization as a whole. HR leaders will find opportunities in these developments and must put programs and practices in place today, to meet the challenges of tomorrow.

In ensuring such objectives are achieved, the human resource function is to implement an organization's resource requirements effectively, taking into account centralized, state and local labor laws and regulations; ethical and principled business practices; and net cost, in a manner that maximizes, as far as possible, employee inspiration, pledge and efficiency.

Contemporary Challenges of Human Resource Management

The role of the HR manager must be parallel to the needs of the changing organization. Successful organizations are becoming more malleable, supple, quick to change directions, and customer-centered. Within this environment, the HR professional must learn how to manage effectively through planning, organizing, leading and controlling the human resource and be knowledgeable of emerging trends in training and employee development.

Nowadays, challenges of HRM are increasing like fire in a forest. Cut-throat competition has made the task of satisfying everyone quite complicated. Few challenges are as follows:

- **Global Competition**: Today, Indian companies are seeking business opportunities in the global arena to grow and prosper. International competition in goods and services is forcing major economies into a global association. Competition and co-operation with foreign companies has become an important focal point for businesses. We can see an interesting movement in import-export trend in India, over the past few years. Now, more HR professionals are becoming responsible for helping to make the efforts at business globalization effective. Hence, while managing across borders global competition provides new and broader opportunities for organizations, and it also represents a "quantum leap in the complexity of Human Resource Management".

- **Advancements in IT**: This has enabled organizations to take advantage of the information detonation. The effect of computer networks is so spectacular that at a broader level, organizations are changing their way to do business. E-commerce is rapidly becoming the organizational challenge of the new millennium. Few areas that have benefitted through HR software are process automation, quick handling of employee grievances, resource utilization etc. The Human Resource Management implications are just mind boggling.
- **Increasing Diversity in the workforce**: Another important challenge for Human Resource Management is the changing pattern of workforce. The increased diversity of the workforce has caused organizations to re-examine practices, policies and values. The perception that the employers must obligate to equal employment prospect through positive, confirmatory actions has a record of more than 30 years. Another inclination says about the increasing average age of the human resources and inhabitants. Trends in human resources diversity pose many challenges to HR managers.
- **Managing Increasing Changes**: In a survey by AIMA, 71.8

per cent of executives polled said that they have at least one change proposal going on in their organizations. Yet amazingly, in contrast to the Home Department practice, only about two-thirds of the executives believe that their companies have any sort of formal change – management program to support these initiatives. This is ill-fated because successful change rarely occurs naturally or easily. Given the rate of knots of today's commerce, organizations can once in a blue moon locate at rest for long. In highly cut-throat environments, where competition is worldwide and innovation is nonstop, alteration has become a hub of proficiency of organizations.

- **Managing Human Capital**: The term Human Capital explains the comprehension, skills and capabilities of individuals that have economic value to an organization. It is ethereal (intangible) and cannot be managed the way organizations manage technologies, products, etc. The rationale is that the employees own their own Human Capital. If an esteemed employee leaves a company, then he takes his Human Capital along with him and on the other hand, any investment the company has made in training and development of that person is lost. Managers must continue to build up better-quality proficiency, knowledge and experience, within their workforce, in order to build human capital in organizations. Recruitment programs focus on identifying, staffing and hiring the most excellent and the brightest talent available. Training programs add stars to these recruitment practices to provide practiced enhancement, particularly in areas that cannot be transferred to another company if employee leaves. Accordingly, managers have to do a good job of providing developmental homework to employees and ensuring that their job duties and necessities are stretchy enough to allow for expansion as well as for learning.

- **Meeting customer expectations**: This is the backbone or strength of character for any organization. A manager must imagine further than internal management issues, like customer necessities of quality, excellence, innovation, variety and responsiveness. In today's market scenario, innovation is taking an important place. How well does a company understand its customers' desires? How swift can it build up and get new manufactured goods to market? How successfully has it responded to out of the ordinary concerns? Management innovations such as TQM and Six Sigma are two approaches to responding to patrons.

  -TQM is a set of main beliefs and practices whose foundation thoughts including understanding customer desires, doing things accurate the first time and go-getting for uninterrupted enhancement. The meaning of the word 'total' is often misunderstood – it does not refer to total quality, instead it is a translation from the Japanese terminology for 'company -wide'. A consequence of organizational growth and compartmentalization has been the inability of any one 'department' to make an effective impact on quality improvement without cooperation and involvement of other departments". The barriers of TQM are:

  - Poor communication or lack of communication
  - Lack of overall mission and goals
  - Competition between departments, shifts, areas.
  - Too many levels of management that filter

information

- Decisions and resource allocation without regard to social memory

- **Six Sigma** is a procedure used to interpret customer desires into a set of most advantageous tasks that are performed in gig with one another. At many organizations, Six Sigma simply means a measure of quality that strives for near flawlessness. Six Sigma is a closely controlled, data-driven approach and line of attack for eliminating defects (driving toward six standard deviations between the mean and the nearest arrangement limit) in any process from manufacturing to transactional and from product to service. The statistical demonstration of Six Sigma describes quantitatively how a process is performing. To achieve Six Sigma, a process must not produce more than 3.4 defects per million opportunities.

A Six Sigma defect is defined as anything outside of customer specifications. A Six Sigma opportunity is then the total quantity of chances for a defect. Process sigma can easily be calculated using a Six Sigma calculator. The elementary goal of the Six Sigma line of attack is the accomplishment of a measurement-based strategy that focuses on process improvement and variation reduction through the application of Six Sigma improvement projects. This is accomplished through the use of two Six Sigma sub-methodologies: DMAIC and DMADV. The Six Sigma DMAIC process (defines, measure, analyze, improve, control) is an enhancement system for existing processes falling below specification and looking for incremental improvement. The Six Sigma DMADV process (define, measure, analyze, design, verify) is an improvement system used to develop new processes or products at Six Sigma quality levels. It can also be employed if a current process requires more than just incremental step up. Both Six Sigma processes are executed by Six Sigma Green Belts and Six Sigma Black Belts, and are overseen by Six Sigma Master Black Belts.

Figure 1 : HR practitioners' Future challenges

Adapting a leadership role
Acting as a catalyst for social change
Transforming performance management system
Ensuring HRM interventions add value
Building intellectual capital
Innovating new products, services and processes
Supporting new organizational designs
Supporting formal and informal HRM practices

Challenges for the HR Practitioners

Organizations that do not locate their prominence on attracting and retaining talents may find themselves in awful consequences, as their competitors may be outplaying them in the planned employment of their human resources.

With the increase in competition, locally or globally, organizations must become more flexible, supple, responsive, and customer-focused to succeed. And within this change in environment, the HR professional has to evolve to become a planned associate, an employee supporter or advocate, and a change guide within the organization. In order to succeed, HR must be a business obsessed picture and be able to manipulate key decisions and policies. In general, the hub of today's HR Manager is on strategic human resources withholding and talents development. HR professionals will be present to help motivate organizations members and their loyalty, so as to achieve the highest point. The HR manager will also encourage and struggle for principles, moral, philosophy, way of life, and mysticism within their organizations, especially in the management of workplace multiplicity.

A HR manager can meet the challenges of workplace multiplicity; motivate employees through gain-sharing and executive information system through proper planning, organizing, leading and controlling their human resources.

Opportunities for HRM

In today's rapidly changing world, it's difficult to foretell what might happen next year. Things are changing overnight, so it's really difficult to tell what will happen next.

But HR professionals can't afford to wait for change to occur. HR leaders must be hopeful of new developments, clinch them and develop the strategies necessary for their organizations to succeed.

That's why the Society for Human Resource Management conducts a biennial survey of HR professionals and collects their views on the issues that will have the greatest impact on the workplace in the next decade. In the most recent Workplace Forecast, HR professionals identified the top five workplace issues: "Health care costs; HR technology; safety and security; demographic changes; and the changing nature of the HR profession itself"

Rising health care costs constitute a major threat to national economic growth. A growing number of business leaders cite high health care costs as the chief obstacle to hiring new workers. If the upward corkscrew continues, the result will be higher business costs, undercutting U.S. competitiveness in the global marketplace. One of

HR's prime responsibilities is Securing employee access to health care while controlling costs.

While HR technology does not appear to be well-established in many organizations (see SHRM's 2005 HR Technology Survey Report), there is broad agreement that competency in technology-based HR systems will be essential for HR professionals to participate in setting organizational strategy.

Safety and security continues to be a major issue on the political agenda and has now emerged as a significant concern in the workplace. HR professionals bear the responsibility of ensuring that their organization's employees are protected. While creating new privacy concerns for employees, technology may hold the key to many security solutions--another reason for HR professionals to gain technological competency.

Demographic changes, particularly the aging of the workforce, present significant challenges as organizations prepare for the next wave of retirement. These circumstances provide opportunities for HR professionals to demonstrate leadership by implementing creative staffing policies such as phased retirement, job-sharing and retiree "recycling."

Things to be done for sure shot success

HR is having pivotal role in any organization as they are handling people who in turn are managing all other activities.

1. Inculcate innovative incentive plans that recognize employee contributions and grant enhancements.
2. Full utilization of skills and practices in order to exploit environmental opportunities and neutralize threats.
3. Indulge in non-stop quality improvement through TQM and Six Sigma approach.
4. Rely on self-managed teams and decentralized operations to

deliver goods in difficult times.

5. Lay off workers in a smooth way explaining facts to unions, workers and other affected groups.

Key focusing things

The HR managers should focus on certain things which are often unintentionally escaped. These key points are as follows:

a) Fair game policies- HR policies should be based on reliance, ingenuousness, fair play and harmony.

b) Inspiration- Develop circumstances in which people are willing to work with fanaticism, inventiveness and zeal; inspire people, so as to feel like conquerors.

c) Relations- Fair dealing of people and timely rectification of accusations would no doubt give a way for healthy work-place relations.

d) Timely Up-gradation- Workers should be timely upgraded for technological changes as and when needed. This will not only help the individual but also the entire system.

e) Quality awareness- Quality should be enhanced in all aspects. There should be a proper commitment for in all aspects of personnel administration.

Due to the new drift in HR, in a nutshell the HR manager should take care of people considering them as resources, reward them justifiably, and amalgamate their ambitions with corporate aspirations through suitable HR policies.

Key functions of HR for the challenges to be faced

Human Resources may develop policies, standards, processes etc and even may set strategies that should implement in all the areas. The distinctive ranges of organizations are as follows:

1. Maintaining alertness of and fulfillment with local, state and

central labor laws.

2. Staffing, selection and training on an ethical manner.
3. Maintain employee's records confidentially.
4. Proper organizational design and development is to be maintained.
5. Performance, conduct and behavior by the management are to be taken into consideration.
6. Industrial and employee relations should be maintained.
7. Human resources (workforce) analysis and workforce personnel data management is also to be considered.
8. Compensation and employee benefit should be well thought of.
9. Training and development of the employees should be done at regular interval of time.
10. Employees should be motivated so that they may work with full enthusiasm and loyalty.

Accomplishment of such policies or standards may be straightly managed by the HR function itself, or the function may indirectly supervise the implementation of such activities by managers, other business functions or via third-party external partner organizations.

The BPO industry and the Human Resource challenge in India

The Business Process Outsourcing industry is one of the fastest growing industries in India – growing at a rate of almost 40 per cent, year on year. While, this presents an excellent employment opportunity, it also brings its unique set of challenges. Some of these challenges are:

- Recruiting the right talent – huge demand supply imbalance
- Retaining employees who are expected to leave the organization due to
    - monotonous nature of the work

  - odd working hours
  - competition poaching trained talent within the industry
- Rising cost of labor and employee expectations

Motif's HR practices

Motif, Inc., a specialized Business Process Outsourcing company - serving Fortune 500 clients - has demonstrated expertise in rules based back office transaction processing services and personalized email and chat response services which involve decision making. Motif's services include Financial, HR – Benefits administration and Retirement services, E-Commerce and Mortgage.

To meet the above challenges, Motif has implemented various HR best practices. Motif has created an open and transparent work culture reflective of the US work environment where respect for every employee, open door policy, constructive debates and ideas are at the core of HR practices. Motif also practices a 'Work hard Party hard' culture and has regularly scheduled company events along with monthly performance awards. Motif encourages every employee to think out of the box and has rewarded employees for their contribution towards the development of innovative tools and process re-engineering methodologies. This has been the guiding force that has fostered growth and satisfaction among employees.

Motif has incorporated HR best practices in:

- **Recruitment**

  Motif is an equal opportunity employer. A rigorous selection and pre-employment screening process have been established which help bring in the best talent available to provide competitive advantage to its clients. Employees are provided a clear understanding of Motif's standards of productivity, quality, and conduct which has increased efficiency, facilitated compliance with company policies and procedures, improved job satisfaction and has helped the company in retaining talent.

- **Training**

  Motif's continuous investment in training and development has resulted in value creation for employees and high quality performance. Motif's training team, led by a resident US trainer, has been instrumental in establishing valuable training programs which include product training, Americanization, understanding of the US culture, business writing skills and soft skills. Motif has continuously enhanced the curriculum and the learning experience by incorporating feedback and introducing new self improvement programs.

- **Performance Management**

  Motif has an objective quarterly performance evaluation process. This has resulted in regular performance assessment and coaching of employees to help them achieve targets and improve performance.

- **Continuous Learning**

  Motif's commitment to employee development has resulted in starting the Motif University. The Motif University offers courses (developed with an ongoing training needs assessment process) to employees to upgrade their technical and soft skills. 'The Motif Challenge' is another initiative in continuous learning. It is a competition where every employee can showcase their talent of implementing a business idea. This brings out the competitive and creative skills within Motif's employees.

  Motif values creativity and has institutionalized 'Innovation awards' for employees whose contributions have helped Motif deliver continuous value addition to its clients. Other regular performance awards at Motif include top individual, top team, 'Above and Beyond' awards.

- **Wealth Creation**

  Motif's intent of 'wealth creation' for all those who contributed to its success resulted in the sharing of profits of the company with the employees. Motif has been consistently doing this for years. Going a step further, Motif recently offered 'Employee Stock Option Plans (ESOP)', to its long serving employees. ESOPs create a sense of ownership among the employees and encourage them to directly relate their performance to the growth of the company.

- **Giving Back to the Community**

  Motif is committed to contribute towards the betterment of the community and society at large. Activities such as the Annual Motif Charity Walks, Annual Blood Drives, Christmas Day celebrations with underprivileged children have developed, among the employees, a pride of association towards the company. This has encouraged them to become responsible citizens besides being better professionals.

The Result

These innovative HR practices have been the key differentiators and have resulted in:

- Motif being ranked one among the -
  - Top 10 BPO Companies to work for in India – two years in a row (2004 & 2005)
  - 5 Preferred BPO employers in India
  - 11 Dream Companies to work for in India

Motif is striving to realize its vision of continuous value creation for its customers, employees, investors and society and working towards being the most preferred employer.

Figure 2 : Motif's key differentiators

Source: *IDC – Dataquest Employee Satisfaction Survey, 2004 & 2005*

Conclusion

The advancement of Human Resource Management can be traced back to the Human Resource pressure group in the pre-historic episode. However, in the up-to-the-minute age, i.e., up to 1930s, it was referred to as personnel management and the center of attention was on the employer-employee relations. Studies on Human Resource were at the outset guided by Taylor's scientific management principles and then measured off all the way through the Hawthrone studies to the behavioral school based on the theories of Abraham Maslow, Herzberg and Douglas McGregor.

Various developments in the 21st century indicated the advent of the facts and IT epoch. During the initial phases, IT was perceived as an all-pervasive phenomenon and attempts were made to jingle each and every organizational process to this enlargement. On the other hand, the know-how of a outsized number of organizations both at the worldwide and the countrywide stratum has led to the trepidation that IT has to play only an encouraging role in achieving organizational objectives and for this rationale an organization has to focus on its three nucleus areas, i.e., people, process and performance.

In organizations, it is important to determine both current and future organizational requirements for both core employees and the dependent workforce in terms of their skills/technical abilities, competencies, flexibility etc. The analysis requires consideration of the internal and external factors that can have an effect on the resourcing, development, motivation and retention of employees and other workers.

External factors are those largely outside the control of the organization. These include issues such as economic climate and current and future labor market trends (e.g., skills, education level, government investment into industries etc.). On the other hand, internal influences are broadly controlled by the organization to predict, determine, and monitor, for example the organizational culture, underpinned by management style, environmental climate, and the approach to ethical and corporate social responsibilities.

Human Resources Development is a framework for the expansion of human capital within an organization or (in new approaches) a municipality, region, or nation. Human Resources Development is a combination of training and education, in a broad context of adequate health and employment policies that ensures the continual improvement and growth of the individual, the organization, and the national human resourcefulness. Adam Smith states, "The capacities of individuals depended on their access to education". Human Resources Development is the medium that drives the process between training and learning in a broadly fostering environment. Human Resources Development is not a defined object, but a series of organized processes, "with a specific learning objective" (Nadler, 1984) within a national context, it becomes a strategic approach to inter sectoral linkages between health, education and employment.

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Agriculture and New Information Technology

* Dr. Ramesh Salian

Abstract

Enhancing the ability of farmers to connect with the knowledge, networks, information and institutions necessary to improve their productivity, food security, and employment opportunities is a fundamental development challenge. Information and Communication Technologies (ICT) play an important role in addressing these challenges and uplifting the livelihoods of the rural poor particularly in the developing economies. The new ICT includes digital devices such as computers, E-mail, internet, multimedia, video conference, mobile phones, iPods, satellites, GPS technology, Remote Sensing Technology, etc which have the potential of providing vast amount of relevant information to rural population in timely, wide-ranging and cost effective manner. Information about new opportunities in the market, prices of different inputs, quality and availability of inputs, prices and demand for different qualities, information about government policies, rules and regulations related to agricultural marketing, information on biological, chemical, meteorological aspects is the core requirements of the farming community. Information technology can be powerful catalyst for change and a great harbinger of prosperity and a high quality life. This article explores the potential contribution of ICT to the various sectors of agriculture in general and farmers in particular of developing countries and discusses the valuable contribution of ICT to Agriculture Knowledge

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Management, gathering, storing, retrieving, and disseminating innovations needed by rural farm families and linkages between research and extension systems.

***Key words**: ICT, Agriculture, Sustainable Development, Internet, Information System and, Technical Change*

Introduction

Agriculture is an important sector with the majority of the rural population in developing economies depending on it. Agricultural sector faces major challenges of enhancing production in a situation of deteriorating natural resources necessary for production. The growing demand for agricultural products, however, also offers opportunities for producers to sustain and improve their livelihoods. Information is a prerequisite for development. Information and communication technologies could play important role in meeting the prevailing challenges related to sharing, exchanging, and disseminating knowledge and technologies. ICT allows capitalizing to a great extent on the wealth of information and knowledge available for agricultural knowledge.

Where once rural areas were largely disconnected from the greater world, today, networks of information and communication technologies (ICTs) enmesh the globe and represent a transformational opportunity for rural populations, both as producers and consumers. However, climate change and price fluctuations in the global food market remind us that realizing this opportunity requires a long-term commitment to mobilizing appropriate resources and expertise (Angelica V. Ospina & Richard Heeks). Sustained growth in agricultural production and productivity is essential for the overall stability of the developing economies. Efficient agricultural management involves appropriate application of production and conservation practices for the development of land water resources, aimed at increasing the food production on a sustainable basis. Augmenting productivity in agriculture and allied activities is the only way to sustainable development. Substantial increases in agricultural development are possible by bringing additional land under cultivation and improved crop management technologies such as the use of high yielding input responsive, energy intensive and stress tolerant varieties, increased irrigation and integrated crop nutrition and protection. (Rao D P, 1999) Access to information and communication is a crucial requirement for sustainable agricultural development. (Sharma, S D, 2002)

The agricultural sector remains at the core of developing countries' economies, playing a critical role in food security (at the local, national and international levels) and in the sustainability of millions of livelihoods of small producers and rural inhabitants. Rural agricultural communities are closely linked to the conservation of natural habitats and vulnerable ecosystems, and to the cultural identity of developing nations. In spite of their developmental significance, these communities are also characterized by systemic poverty and marginalization, which aggravate – and are aggravated by – the effects of climatic variations, seasonal changes and constant uncertainty caused by climate change (Angelica V. Ospina & Richard Heeks, 2012).

Agricultural productivity growth contributes to better nutrition through raising incomes, especially in countries where the sector accounts for a large share of the economy and employment, and by reducing the cost of food for all consumers. It is, however, important to realize that the impact of agricultural growth is slow and may not be sufficient to cause a rapid reduction in malnutrition. Over the years, it has been observed that the difference between the farming practices in developed countries and those followed by farmers in poor developing nations, the productivity levels of farmers in United State of America and those in backward part of Africa or Asia, as also the differences between lab research results and the practical ground reality. All these differences have been partly attributed to an awareness gap, the gap between the information rich and the information poor. This is the gap, which an information technology revolution can bridge. Information technology can mark the culmination of ignorance. Availability of information can stimulate agricultural development in many ways. It can provide small farmers with the flexibility to change crop chains, develop products for small niche market and market directly to the consumer or commodity broker, even in distant area, organizations of small products could use inputs, better storage facilities, improved transportation links and collective negotiation with buyers.

Agricultural Information Systems

An agricultural information system is a system in which agricultural information is generated, transformed, transferred, consolidated, received and feedback in such a manner that these processes function synergically to underpin knowledge utilization by agricultural producers. In the concept of an information system the institutions generating, transforming, transferring and receiving information are emphasized as well as the information flows and linkage mechanisms between them. (Roling, 1987). Information of the required quality always has the potential of improving efficiency in all spheres of agriculture. The emerging scenario of a deregulated agriculture has brought in a greater 'need' and urgency to make it an integral part of decision making by Indian agricultural community (Mittal).

Technical Change in Agriculture

Agriculture is already technologically sophisticated and will become increasingly so as new biotechnologies and information technologies become available (Walsh, 1991). During the last two hundred years, technological change has often been related to the economic growth in form of new types of goods and services. Technological change results when farmers adopt new technologies. Agriculture in the twentieth century was characterized first and foremost by technological innovation that began in the industrialized world and spread to the developing countries as the Green Revolution. This revolution in biological, chemical and mechanical technology made it possible for agricultural production grows faster than the demand for food despite a rapidly growing world population (Rolling, 1987). The indirect impact of agricultural growth can be substantial. In a study of agricultural and industrial performance in India, Rangarajan (1982) found that a 1 per cent addition to the agricultural growth rate stimulated about a 0.5 per cent addition to the growth rate of industrial output, and a 0.7 per cent addition to the growth rate of national income. At a regional level Gibb found that each 1 per cent increase in agricultural income in the Nuena Eceja province of central Huzon in the Philippines generated a 1 to 2 per cent increase in employment in most sectors of the local non farm economy.

Defining ICTs

United States Agency of International Developments (USAID) draft "ICT for Development Strategic Plan" defines information and communication technology as the combination of hardware, software, and the means of production that enable the exchange, processing, and management of information and knowledge. ICTs thus include technologies and methods for storing, managing, and processing information (e.g., computers, software, books, PDAs, digital and non-digital libraries) and for communicating information (e.g., mail and email, radio and television, telephones, cell phones, pagers, instant messaging, "the web," etc.) (USAID *2003)*. Darnton and Giacoletto (1992) defines it as the "systematic study of artifacts that can be used to give from or description to facts in order to provide meaning or support for decision making and artifacts that can be used for organization processing, communication and application of information". UNESCO considers information technology as "Scientific technological and engineering disciple and the management techniques used in information handling and processing, their applications, computers and their interaction with men and machines and associated social, economic and cultural matters" (UNESCO, 1996).

Thus information technology refers to the advanced information and communications carriers of electronic data, including cable and satellite television, digital and traditional airwave radio, CD-ROMs, broadband, narrow- band and wireless (e.g. cellular) telephone and local-area (LANs) and wide-area (WANs) computer-networks including the internet.

Information Technology Tools in Agriculture

In the era of information highway, it is quite often felt that large chunk of potential clientele in the farming sector has been left behind. This frontier technology holds a lot of promise in addressing the farming needs of rural communities and enabling them to get easy access to information technology, like biotechnology, is set to become important in agriculture. Its merit lies in its ability to include. It is possible to achieve information flow through agri-websites enabling us to take and updated uniform databases on farming practices to the individual villages with data customized to individual agro-climatic zones. New information and communication technologies (ICTs) continue to penetrate countries in all regions of the world, as more and more people are getting connected.

Some of the important information technology tools for agriculture are discussed below.

- **Precision Agriculture**: Precision Agriculture (Also known as variable –rate, prescription, site-specific, or soil specific farming) is rapidly becoming the most touted of emerging technologies in American agriculture (Wolf & Frederick 1996). The National Research Council (NRC) of U. S defines it as "….a management strategy that uses information technologies to bring data from multiple sources to bear on decisions associated with crop production". Precision agriculture provides tools for tailoring production inputs to specific plots within a field, thus, potentially reducing input costs, increasing yields, and reducing environmental inputs by better matching inputs applied to crop needs (Ralph Heimlich) Ralph Heimlich mentioned following Information and Communication tools for agriculture
- **Artificial Intelligence (AI) Systems:** Artificial Intelligence (AI) predicts outcomes or recommends actions based on computer–based learning that incorporates experience through developing heuristic rules, rather than through encoding theoretical relationships between variables from disciplinary science.
- **Crop Scouting:** Crop Scouting predicts ground level inspection of the crop for weed, inset, disease, and moisture stress problems. Scouting often involves use of pheromone or other inset traps to estimate pest levels as part of integrated pest management (IPM) approaches.

- **Expert Systems:** Often considered a branch of AI, expert system models are differentiated from other AI approaches because the rules governing decisions are inputs by human expects, rather than deduced experimentally by the system. In PA expert systems would include rules, say, when to spray for specific pests, when to till, etc. modified by the past, current, and expected conditions represented by soil, weather, pest level, and other data input from the GIS
- **Geographical Information Systems (GIS):** Computerized map and data base programme that contains spatial (map) and attribute (Characteristic) data linked by a common geographic identifiers. Geographical information systems help in collecting the data in the field, combining agricultural data from different sources, geographical data interpolation for agriculture, analyzing spatial data on the farm, interpreting and delivering results for farm management.
- **Global Positioning System (GPS):** It determines precise location (latitude and longitude) based on the radio signals from 4 or more of the 24 satellites in the GPS launched and maintained by the U.S. Department of Defense (DOD). GPS have begun to transform agriculture to a precision, high – performance industry where data are used to minimize costs and optimize yields. Farmers use tractor mounted GPS receivers to record location both when they take soil chemistry readings and when they apply fertilizer and herbicides (Mass, and Steen, 1999).
- **Grid Soil Sampling:** Collection of soil samples is based on a systematic grid laid out across a formed field. Soil samples are analyzed in a laboratory to determine soil characteristic such as texture, organic matter, PH, and concentration of nitrogen, phosphorous, potassium or other nutrients.

- **Local Sensing:** A genetic term for sensors mounted on farm machinery or equipment to detect soil conditions, nutrient concentrations, weed density and location, soil moisture live-stock identify and other conditions for real-time input to variable – rate applications.
- **Process models:** Detailed simulation of crop, livestock, or tree growth based on agronomic, physiologic, or hydro geologic theory and implemented at short (daily, hourly) time steps.
- **Remote Sensing:** Data on light reflection are collected by instruments carried in airplanes or orbiting satellites that can be used to estimate the spatial pattern and vigor of vegetation at small areas within the field (Srivastha, 2000). Satellite remote sensing, such as the LANDSAT thematic mapper and SPOT satellites, can collect data with a spatial resolution of 10-30 meters, while airborne sensors and the next generation of satellites can achieve spatial resolutions of 1-5 meters.

  New remote sensing methods and applications for use in the agricultural industry are available. Applications and developments include:

  - Cropped areas cropping intensity and yield monitoring.
  - Specific surveys- using area – frame sampling techniques can be used to provide quick and precise information, which is used for planning and policy definition purposes and the design, development and maintenance of complex spatial information systems and their use for decision making.
  - Spatial analyses, including statistical sampling and area frame sampling techniques, new sensors and method e.g. with regard to precision farming techniques, and the

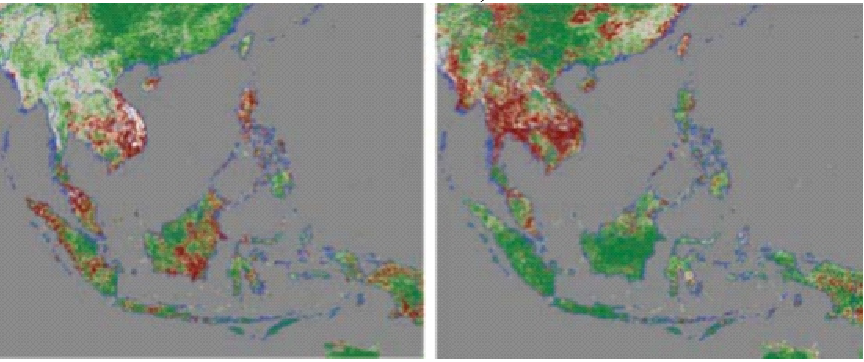
applicability of new sensors and satellites.

- Remote sensing of forest and vegetative cover and growth, using low resolution satellites data for crops and through high resolution satellite imagery (supported by ground survey).

- **Weather Forecasting:** Since 2000, new ICTs have given farmers and partners better opportunities to manage climate risk. Satellite images capture raw data that can be transformed into information useful for agriculturalists, helping them optimize decisions related to choosing crops (based on water requirements), planting (timing and planting density), buying inputs, and applying fertilizer. Climate information can also improve insurance markets.
- **Yield Monitoring:** Automated measurement of the amount of production taken at intervals as the combine or harvester passes over a field.
- **Nutrient Management Planning (NMP):** Nutrient Management Planning (NMP) is an organized procedure for unitizing nutrients such as nitrogen (N) and phosphorus (P) in agriculture. Controlling nutrient losses from land-based agriculture is difficult for a number of reasons. (Magette, and Carton, 1997). Nutrient management planning (NMP) is recognized internationally as an agricultural "best management practice" that assists not only in controlling nutrient from agriculture, but also in improving farm management decisions (Magette, W L Carton, O T, and Power V, 1997).
- **Reprography:** Reprographic technologies include photocopying, micro –copying, duplicating and in plant printing. Reprography technology has been playing a vital role

in dissemination of recorded information. Reprographic technology is accepted as one of the means of document resource in geographically located distant remote places where the extension workers and farmers have not access to modern electronic media.

Image 1: Satellite Image of Vegetation Changes from 1998 to 2004 (Red Indicates Decreasing Vegetation and Green Indicates an Increase)



Source: FAO (http://www.fao.org/giews/english/spot4/sea/index.htm). In http://www.fao.org/docs/eims/upload/212839/catAPARIS_Workshop-FAO.pdf

- **Radio:** Pocket radio with modern antenna can perhaps be used by the field functionaries to transmit information quickly and exchange the ideas on agriculture related problems which require immediate solutions. Radio Frequency Identification (RFID) technology, which has already proven to be extremely effective in tracking and identifying people and products for logistic purposes, can be applied to the agricultural sector in two ways – production management (from tracking growth and reproduction records to integrating transportation information) and inventory management (from boosting operational efficiency to minimizing loss and damages).
- **Nanotechnology in Agriculture:** Nanotechnology can help to develop a range of inexpensive applications to increase soil

fertility and crop production and thus help to eliminate malnutrition, a contributor to more than half the deaths of children under five in developing countries. We currently use natural and synthetic zealots, which have a porous structure, in domestic and commercial water purification, softening, and other applications. Using nanotechnology, it is possible to design zeolite Nanoparticles with pores of different sizes. These can be used for more efficient, slow and thorough release of fertilizers; or they can be used for more efficient livestock feeding and delivery of drugs. Similarly, nonocapsulses can release their contents, such as herbicides, slowly and in a controlled manner, increasing the efficacy of the substances delivered (Singer, Peter a, Fabio Salamanca, Buentello, Abdallah S and Daar, 2005).

- **Mobile sector:** Mobile phone technologies are presenting farmers with unprecedented opportunities to run their operations more productively and to grow their income levels.

  Mobile phones are extensively used by the farming community for the monitoring and evaluation process. Between 2010 and 2011, mobile-cellular subscriptions registered continuous double-digit growth in developing country markets. The number of mobile-cellular subscriptions increased by more than 600 million, almost all of them in the developing world, to a total of around 6 billion, or 86 per 100 inhabitants, globally. China alone was the home to 1 billion subscriptions, and India was expected to hit the 1 billion mark in 2012. Mobile-cellular penetration increased by 11 per cent worldwide, compared to 13 per cent the previous year. In developing countries, growth was 13 per cent and penetration stood at almost 78 per cent by end 2011. The 7 per cent rise in mobile cellular subscriptions in developed countries – yielding a penetration rate of 122 per cent – is largely due to a strong increase in two of the largest markets, the United States and the Russian Federation (ITU, 2013).

In 2013, there are almost as many mobile-cellular subscriptions as people in the world, with more than half in the Asia-Pacific region (3.5 billion out of 6.8 billion total subscriptions). As global mobile-cellular penetration approaches 100 per cent and market saturation is reached, growth rates have fallen to their lowest levels in both developed and developing countries. Mobile-cellular penetration rates stand at 96 per cent globally; 128 per cent in developed countries; and 89 per cent in developing countries (ITU, 2013).

Table 1: Mobile-Cellular Penetration in 2013

Country / Economy	**Per 100 inhabitants**
Africa	63
Asia & Pacific	89
Developing countries	**89**
Global	**96**
Arab States	105
The Americas	109
Europe	126
Developed countries	**128**
CIS (Commonwealth Independent States)	170

Source: *Compiled by the author from: ITU, World Telecommunications, ICT database*

Mobile Cellular penetration has reached 89 per 100 habitants in the developing economies and it is 128 per 100 in habitants in developed economies and in the world it s 96 per 100 in habitants. It is clear from the Table 1 that 90 per cent of the regions of the world are covered under the mobile network and probable in a couple of year entire world population will be covered by the mobile network.

Internet and Agricultural Information

Internet: The internet is a network of millions of computers across the world that all work together to share information. The word 'Internet' is the short form of International Network. Today internet is also known in different names such as Information Super High Way, The Net, The Web, The Matrix, The Data Sphere and The Electronic Frontier

According to the International Telecommunication Unions Report (2013) Internet user penetration rates in developing countries have tripled over the past five years, and the developing countries' share of the world's total number of Internet users has increased, from 44 per cent in 2006 to 62 per cent in 2011. Today, Internet users in China account for 23 per cent of the world's total Internet users and 37 per cent of the developing countries' Internet users. More and more people have access to the Internet from home. Between 2010 and 2011, the proportion of households with Internet access grew by 14 per cent. By end 2011, out of 1.8 billion households worldwide, one-third or 600 million had Internet access. In developed countries, growth is much lower, at 6 per cent, reflecting the fact that a high proportion of households are already connected to the Internet. Most households in developed countries will have fixed broadband Internet access, and Internet video/IPTV will increasingly replace traditional TV broadcasting. This will increase data traffic and prompt demand for more capacity (ITU, 2013).

As per the ITU database (2013), in 2013 over 2.7 billion people are using the Internet, which corresponds to 39 per cent of the world's population. In the developing world, 31 per cent of the population is online, compared with 77 per cent in the developed world. In 2013, 41 per cent of the world's households are connected to the Internet. Half of them are in the developing world, where household Internet penetration has reached 28 per cent. In the developed world, 78 per cent of all households are connected to the Internet. 90 per cent of the 1.1 billion households not connected to the Internet are in the developing world. Europe and Africa are the regions with the highest and the lowest levels of household Internet penetration respectively: 77 per cent in Europe compared with 7 per cent in Africa. The majority of households in the Americas are online (6.1 per cent), compared with around one third of households in the Arab States and Asia and the Pacific. Between 2009 and 2013, Internet penetration in households has grown fastest in Africa, with annual growth of 27 per cent, followed by 15 per cent annual growth in Asia and the Pacific, the Arab States and the CIS. Europe and Africa are the regions with the highest and the lowest levels of household Internet penetration respectively: 77 per cent in Europe compared with 7 per cent in Africa. The majority of households in the Americas are online (61 per cent), compared with around one third of households in the Arab States and Asia and the Pacific. Between 2009 and 2013, Internet penetration in households has grown fastest in Africa, with annual growth of 27 per cent, followed by 15 per cent annual growth in Asia and the Pacific, the Arab States and the CIS.

The Table 2 reveals that in Europe more number of people is using Internet compare to USA. In Africa only 16 out of 100 inhabitants using internet, in Asia and Pacific 32 out of 100 inhabitants is using internet. Table 3 shows that only 10.07 per cent of Indians are using

Table 2: Internet Users by Region-2013

Region	Per 100 inhabitants
Africa	16
Asia & Pacific	32
Arab States	38
CIS	52
The Americas	61
Europe	75

Source: *Compiled by the author from: ITU, World Telecommunications, ICT database* internet. Backward African countries like Kenya, 28 per cent of the people, Uganda 13 per cent of the people, in Srilanka 15 per cent of the people, in Norway 93 per cent, China 38 per cent of the people using Internet. India being a fastest growing economy of the world is lagging behind in adopting ICT comparing to its neighboring nations. It may be due to large population of the country and illiteracy of the people.

Table 3: per centage of Individuals Using Internet in year 2010 and 2011 in the selected countries

Country	2010	2011
India	7.50	10.07
Iran	16	21
Israel	67.50	70
Japan	78.21	79.53
Bangladesh	4	5
Canada	80.30	83
Denmark	88.72	90
Indonesia	10.9	18
Kenya	14	28
Norway	93.39	93.97
Pakistan	8	9
Russia	43	49
Srilanka	12	15
Uganda	12.50	13.01
UK	78	82
China	34.30	38.30
USA	74	77.86
UAE	68	70
Malaysia	56.30	61
Denmark	88.72	90
Germany	82	83

Source: *Compiled by the author from : ITU, World Telecommunications, ICT database*

Internet is a very powerful tool to the farming community to increase the productivity and income level. Living in a remote area of a region, by using internet a farmer can access agricultural related information in finger tips. Many countries of the world and organization are providing information to the farming community through internet. In Karnataka, the state government hosted a website namely www.raithamitra.com providing price related information to the farmers.

mKRISHI

'mKRISHI' is innovative because it enables farmers to transform information into risk-mitigating actions (TCS' mKRISHI on Pilot Run in Maharashtra," *The Financial Express*, 2009.) The mKRISHI platform, developed by Tata Consultancy Services in 2007, enables farmers to access best-practice information and agricultural experts through low-cost mobile phones using SMS (Banerjee 2010). The connection between agricultural advisory services and risk mitigation is an important one, because information alone is often not sufficient to manage risk. Through the advisory service, farmers might inquire how much fertilizer or pesticide to use, so they can optimize their use of these costly inputs. Similarly, farmers might inquire about when to harvest to avoid inclement weather. Farmers with cameras in their phones can submit photographs to supplement their messages. While responding to farmers' queries, experts are able to incorporate soil information by accessing the soil sensor nearest to the caller's location (Pande et al. 2009). Farmers can also request a voice- or SMS-based expert response. mKRISHI was conceived and developed at the innovation lab of Tata Consulting Services (TCS). The first pilot was deployed in 2010 to an estimated 500 farmers in Uttar Pradesh and Punjab, who pay US$ 1–2 per month to use the service. The service is being provided at a subsidized cost, as farmers were unwilling to pay the unspecified higher cost at which the service was initially offered (Pande 2010). However, mKRISHI has found that farmers may be more willing to pay if information on market linkages and the facilitation of credit is offered along with the advisory services (FAO).

Figure 1: mKRISHI Portal

Source: *TATA Consulting Services- http://www.fao.org/docs/eims/upload/212839/catAPARIS_Workshop-FAO.pdf*

AGMARKNET

The Directorate of Marketing and Inspection (DMI) headed by the Agricultural Marketing Advisor, Department of Agriculture & Co-operation (DAC), implements agricultural marketing policies and programmes of the Government of India. By and Large the States and Union Territories are providing some market information in one form or the other for the benefit of market users like producers, traders and consumers. However, the information collected and disseminated by the use of conventional methods which cause delay in communicating the information to different target groups, is adversely affecting its utility. Improvement in the present market information system by linking all important Agricultural Produce Markets, Agricultural Marketing Boards & Departments in the States and Union Territories is envisaged by DMI under its Agriculture Marketing Information Network (AGMARKNET) by installing computer facilities at Agricultural Produce Markets and connecting with NICNET for Internet/ E-mail services.

Figure 2 : AGMARKNET Portal

***Source**: Department of Agriculture and Cooperation, Government of India, 2007.*

FAO's Digital Information Resources for APAARI

The Food and Agricultural Organization of United Nations is dedicated to provide information and assessments and fostering of knowledge management for food and agriculture. By establishing World Agricultural Information Centre (WAICENT) for providing integrated information system, enhancement of access to timely and relevant technical information and to utilize information as a key resource for development to its members.

FAO has prepared a report for the Asia-Pacific Association of Agricultural Research Institutions (APAARI) to avail the publicly available FAO information system, which will be useful to the organizations in the Asia-Pacific region and relevant to the agricultural research. The report includes with an alphabetical listing of most of FAO's online information resources and databases. The alphabetically listing databases providing variety of information systems to the organizations, research institutions and farmers. Each of the databases is highly useful to the developing economies to increase their food production and income levels. Providing adequate infrastructure for implementation and dissemination of FAO's databases and information systems is the mission to be done by the developing economies to capitalize the efforts of the FAO. FAO's Digital Information Resources prepared for APAARI has been summarized below.

Table 4: FAO's Databases and Information Systems

FAO Databases	Information Systems
AFRIS	The Animal Feed Resource Information System (AFRIS) provides descriptions and chemical data on plants and other feed materials with 650 references and abstracts. http://www.fao.org/ag/AGA/AGAP/FRG/AFRIS/default2.htm
AGRIBANK-STAT	AgriBank-Stat was developed by the Marketing and Rural Finance Service of FAO as tool to provide key information on financial institutions in developing countries which offer financial services mainly to farmers and farmer households. http://www.fao.org/ag/ags/agsm/banks/invent.htm
AGRIPPA	A database of agricultural documents produced by independent authors drawn from the agricultural and development world, and made available free of charge, in electronic format. http://www.fao.org/agrippa/
AGRIS	The International Information System for the Agricultural Sciences and Technology (AGRIS) identifies world literature dealing with all aspects of agriculture. Operational since 1975, AGRIS has accumulated a database of more than 2.7 million references. http://www.fao.org/agris/

AQUASTAT	AQUASTAT is FAO's global information system of water and agriculture developed by the Land and Water Development Division of FAO. AQUASTAT provides users with comprehensive information on the state of agricultural water management across the world, with emphasis on developing countries and countries in transition. http://www.fao.org/ag/agl/aglw/aquastat/main/index.stm
ASFA	Aquatic Sciences and Fisheries Abstracts (ASFA) is an abstraction and indexing service covering literature related to global aquatic sciences. The ASFA database contains bibliographic references, including abstracts, literature on the science, technology, and management of marine, brackish water, and freshwater environments, including their socio-economic and legal aspects. http://www.fao.org/fi/asfa/asfa.asp
CARIS	The Current Agricultural Research Information System (CARIS) identifies projects dealing with all aspects of agriculture which are being carried out in - or on behalf of - developing countries. http://www4.fao.org/caris/
CLIMWAT	CLIMWAT is a climatic database to be used in combination with the computer program CROPWAT. It calculates crop water requirements, irrigation supply and irrigation scheduling for various crops for a range of climatologically stations worldwide. http://www.fao.org/ag/agl/aglw/climwat.stm
CODEX ALIMENTARIUS	The Codex Alimentarius, or the food code, was established by the United Nations and the World Health Organization in partnership with national governments to formulate and harmonize food standards and ensure their global implementation. The Codex Alimentarius database contains an up-to-date archive of meetings as well as all information and publications related to the development of the code. http://www.codexalimentarius.net/
CONSUMPTION	The Consumption database contains annual statistics from 1961 onwards on consumption of fish and fishery products. The statistics are drawn from food balance sheets incorporating fish catch, production of processed and preserved products and trade figures. http://www.fao.org/fi/statist/fisoft/cons.asp
CONVERSION FACTORS	Factors for the Conversion of Fish and Fish Product Landed Weights to Live Weight Equivalents is a database containing the factors used by national fishery statistical offices to convert landed fish weights into live weight equivalents for a wide variety of fish products prepared on board fishing

	vessels. http://www.fao.org/fi/statist/fisoft/conv.asp
COUNTRY PASTURE PROFILES	Basic information about the pasture and forage resources of countries. Each profile provides a broad overview of relevant general, topographical, climatic and agro -ecological information with focus on livestock production systems and the pasture /forage resource and information concerning key institutions and personnel and their current research interests and selected references. Each profile has a custodian responsible for updating. http://www.fao.org/ag/AGP/AGPC/doc/pasture/forage.htm
CROPWAT	CROPWAT is a practical tool to help agro-meteorologists, agronomists and irrigation engineers to carry out standard calculations for evapotranspiration and crop water use studies, and more specifically the design and management of irrigation schemes. It allows the development of recommendations for improved irrigation practices, the planning of irrigation schedules under varying water supply conditions, and the assessment of production under rainfed conditions or deficit irrigation. http://www.fao.org/ag/agl/AGLW/cropwat.htm
DAD-IS	The goal of the Domestic Animal Diversity Information System (DAD-IS) is to promote the sustainable development and conservation of Animal Genetic Resources. DAD-IS serves as the virtual structure to assist countries in implementing the Global Strategy for the Management of Farm Animal Genetic Resources through improved information, coordination and communication. It provides extensive searchable databases, tools, guidelines, library and contacts. http://www.fao.org/dad-is/index.asp
DIAS	The database Introductions of Aquatic Species (DIAS) contains approximately 3,150 records on freshwater and marine species, molluscs and crustaceans. http://www.fao.org/WAICENT/FAOINFO/FISHERY/statist/fisoft/dias/index.htm
ECOCROP 1	ECOCROP 1 is a database designed as a tool to identify plant species particular to specific environments and uses. The information in Ecocrop 1 identifies approximately 1,710 plant species whose most important climate and soil requirements match the information on soil and climate entered by the user. http://www.fao.org/ag/agl/agll/ecocrop.htm
ECOCROP 2	ECOCROP 2 is designed as a library of studies on crop responses in relation to environmental and management factors. The program is created to provide information for crop modeling and to be used as a tool for scientists to organize and

	retrieve their own specific information on plant species. http://www.fao.org/ag/agl/agll/ecocrop.htm#eco2
EMPRES	The goal of the Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES) is to promote the effective containment and control of the most epidemic livestock diseases through epidemiological surveillance, contingency planning, early warning systems and global coordination. http://www.fao.org/ag/AGA/AGAH/EMPRES/index.asp
FAO COUNTRY PROFILES AND MAPPING INFORMATION SYSTEM	The FAO Country Profiles and Mapping Information System is a pioneering information retrieval tool which groups the organization's vast archive of information on its global activities in agriculture and development in a single area and catalogues it exclusively by country. The system offers decision-makers around the world a fast and reliable way to access country-specific information without the need to search individual databases and systems. http://www.fao.org/countryprofiles/default.asp?lang=en
FAOLEX	Created by the FAO LEGAL OFFICE, FAOLEX stores full-text copies of international treaties, laws and regulations related to food, agriculture and renewable natural resources. http://faolex.fao.org/faolex/index.htm
FAOSTAT	The FAO Statistical Database is an on-line multilingual database currently containing over 1 million time-series records from over 210 countries and territories covering statistics on agriculture, nutrition, fisheries, forestry, food Aid, land use and population. http://apps.fao.org/default.htm
FAOTERM	The FAO Terminological (FAOTERM) database is a dictionary covering FAO's specialized subjects - agriculture, biology, forestry, fisheries, economics, statistics, and nutrition – in a multilingual format. http://www.fao.org/faoterm/default.htm
FIGIS	The FAO Fisheries Global Information System (FIGIS) is a global information system on fisheries aimed at providing policy makers with timely, reliable strategic information on fishery status and trends on a global scale. Designed as a policy-based information system, it will enable policy makers to make informed decisions about the key challenges of sustainable development, and will support their shifting towards sustainability-centered management by providing them with a single entry point to strategic data, information,

	to make informed decisions about the key challenges of sustainable development, and will support their shifting towards sustainability-centered management by providing them with a single entry point to strategic data, information, analyses and reviews of fisheries issues and trends. http://www.fao.org/fi/figis/index.jsp
FiSAT	FiSAT was developed mainly for fish stock analysis, but also enables related analyses of size, catch, selection and other data typically collected for tropical fish stock assessment. http://www.fao.org/fi/statist/fisoft/fisat/index.htm
FISHBASE	FishBase contains key information on fish species with more than 25,630 species listed as well as 114,000 common names. The database also contains 29,000 pictures, distribution maps, and even pictures of stamps containing fish. http://www.fishbase.org/search.html?server=NRM-Stockholm
FISHERS	FISHERS contains the number of people engaged in fishing according to the working time devoted to the occupation, as national annual averages, from 1961 onwards. The database also includes statistics from 1990 onwards of employment in aquaculture and separate inland and marine fisheries on a gender disaggregated basis. FISHLEX http://faolex.fao.org/fishery/index.htm. A database of coastal state requirements for foreign fishing, consisting of a series of tables summarizing the provisions of national legislation and of bilateral and multilateral agreements governing foreign fishing in waters under national jurisdiction. http://www.fao.org/fi/statist/fisoft/fishers.asp
FISHSTAT Plus	The system provides users with access to a variety of downloadable fishery statistics databases more detailed than those provided by FAOSTAT. Contains data on quantities and values of aquaculture production, capture production, trade and production of fishery products, as well as Eastern Central Atlantic and Mediterranean and Black Sea capture production. http://www.fao.org/fi/statist/fisoft/fishplus.asp land use and population. http://apps.fao.org/default.htm
FISHERY FLEET	This database contains statistics on fishery fleets (fishing and support vessels) for decked and undecked craft. Numbers of undecked vessels are provided by country and vessel type for powered and unpowered boats. For decked vessels, numbers and aggregate GRT values are available by country and vessel type for classes of GRT, length and horsepower. The statistics, which cover the years 1970, 1975 and 1980 onwards, contain estimates of missing data so that estimates of continental and world totals are available. http://www.fao.org/fi/statist/fisoft/fleet.asp

FIVIMS	The Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS) project contains a network of systems that assemble, analyse and disseminate information on the problem of food insecurity and vulnerability. FIVIMS aims to raise awareness of food security issues, improve the quality of food-security related data and analysis, facilitate the integration of complementary information, and promote better understanding of users' needs as well as improve the use and sharing of information. http://www.fivims.org
FORIS	Database containing information on the distribution of world forests in English, French, Arabic and Spanish. http://www.fao.org/forestry/fo/country/nav_world.jsp
FORESTRY LINKS DATABASE	This database contains links that have been categorized by FAO Forestry Programme staff to facilitate the sharing of information relevant to the quest for sustainable forest management http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=1700&langId=1
GEOWEB	GeoWeb is a web based application that allows customized access to various information tools for assessing global crop and food supply situations. http://geoweb.fao.org/
GIEWS	The Global Information and Early Warning System on Food and Agriculture. (GIEWS) provides regular bulletins on food outlook, food crops and shortages, food supply situation and crop prospects, weather and alerts on a regional or country-by-country basis. http://www.fao.org/WAICENT/faoinfo/economic/giews/english/giewse.htm
GRASSLAND INDEX/GBASE	A searchable grassland index of nearly 500 grassland and pasture species, with picture gallery. http://www.fao.org/ag/AGP/AGPC/doc/GBASE/mainmenu.htm
GTOS	The Global Terrestrial Observing System (GTOS) provides access to the data necessary to manage the change in the capacity of terrestrial ecosystems to support sustainable development. It also houses an international directory of sites and networks that carry out long-term terrestrial monitoring and research activities. http://www.fao.org/gtos/
IMPORTER	The Register of Fish Importers (IMPORTER) comprises some 6,000 names and addresses of producers, importers, exporters involved in trade of fishery products. http://www.fao.org/fi/statist/fisoft/importer.asp

INFOFISH	Equipment Register (IER) of information on manufacturers of fish processing equipment names, addresses and type of products. http://www.fao.org/fi/statist/fisoft/ier.asp
INPhO	The Information Network of Post-Harvest Operations (INPhO) aims to prevent the loss of millions of tonnes of cereals, roots, tubers, fruits and vegetables in developing countries caused by inadequate handling and storage, pest damage, and transport and marketing problems. The database provides one-click access to five databases on post-harvest experts, post-harvest images, storage systems, traditional recipes and other Internet links. http://www.fao.org/inpho/search/search_en/inpho_select.asp
International directory of FISH TECHNOLOGY Institutions	The International Directory of Fish Technology Institutions contains information on fish technology institutions worldwide including name, address, facilities, research and training programmes. http://www.fao.org/fi/statist/fisoft/idft.asp d=1700&langId=1
IES	Irrigation Equipment Supply database houses a list of irrigation equipment services worldwide. http://www.fao.org/ag/agl/aglw/ies.htm
KIMS	The Key Indicators Mapping System (KIMS) was developed by the World Agriculture Information Centre (WAICENT) for the Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS) project. KIMS is user-friendly software, accessible to non-GIS specialists and developed for the specific purpose of collecting, mapping and disseminating food insecurity and vulnerability indicators. http://www.fivims.org/
LEAD	The Livestock, Environment and Development Initiative (LEAD) works for the protection and enhancement of natural resources that are affected by livestock production. It highlights the close and complex interaction between government policies and the environmental impact of livestock production, and identifies the large number of technologies available to mitigate the negative effects of some production systems. http://www.virtualcentre.org/en/frame.htm
METART	TMETART provides low resolution satellite imagery, meteorological data and derived products and information on software tools, methods and techniques used in environmental monitoring, crop forecasting, early warning systems and desert locust control. http://metart.fao.org/

PROSOIL	Interactive database and electronic and archive allowing users to quickly get an overview of selected types of problem soils, to search on literature sources which treat problem soils, to identify tables, figures and case studies related to problem soils, and to retrieve literature sources, tables, figures and case studies in the electronic archive. http://www.fao.org/waicent/faoinfo/agricult/agl/agll/prosoil/psintro.htm
REFORGEN	REFORGEN is the FAO worldwide information system on forest genetic resources and holds information on on-going activities and programmes in the sector. http://www.fao.org/montes/for/form/fogenres/homepage/world.stm
SIS	The Seed Information System (SIS) database, a global list of seed sources, houses the details of approximately 8,000 public and private institutions dealing with seed production and processing in over 150 countries. http://www.fao.org/ag/agp/agps/seed/wlss.htm
SPECIESDAB	The Global Species Database for Fishery Purposes (SPECIESDAB) is a global inventory of commercially important species. SPECIESDAB represents FAO's standard authority on nomenclature and identity of aquatic species used by man. http://www.fao.org/fi/statist/fisoft/species.asp
TAD-info	The Transboundary Animal Disease Information System (TAD-info) is a database management system for the storage and analysis of information on livestock diseases. It also aims to improve disease management systems. http://www.fao.org/ag/AGA/AGAH/EMPRES/tadinfo2/e_tadinf.htm
TERRASTAT	TERRASTAT houses databases containing information on major soil constraints, soil in deserts and dry land areas, population distribution, steep lands analysis, land degradation severity and human-induced land degradation due to agricultural activities. http://www.fao.org/ag/agl/agll/terrastat/
WIEWS	The World Information and Early Warning System on Plant Genetic Resources (WIEWS) provides information on national programmes focusing on the conservation and utilization of plant genetic resources for food and agriculture. http://apps3.fao.org/wiews/wiews.jsp?i_l=EN

Source: *Adopted and compiled by the author from: http://www.fao.org/docs/eims/upload/212839/catAPARIS_Workshop-FAO.pdf*

Conclusion

Jac Stienen in his article *How ICT can make a difference in agricultural livelihoods* writes: " the use of ICTs to strengthen farmer's capacities and better represent their constituencies when negotiating input and output prices, land claims, resource rights and infrastructure projects. Further he writes that ICT enables rural communities to interact with other stakeholders, thus reducing social isolation. It widens the perspective of local communities in terms of national or global developments, opens up new business opportunities and allows easier contact with friends and relatives. A role is also played by ICT in making processes more efficient and transparent. The range of agricultural and economic benefits is wide and includes better management, better and timely information accessing and dissemination, better and integrated production planning, monitoring and follow up, access to the latest results of research and more. There are plenty of opportunities to disseminate agricultural information to the rural communities through mobile phones, internet, Televisions, and Radios. In developing economies nearly, 80 per cent of the population using mobile phones and radios and its usages limited for recreational purpose. Farming related information can be easily transmitted through mobile phones and radio in a very cost effective and comprehensive manner. This equipment can be operational even in local languages.

According to the World Economic Forum, of the 7 billion people in the world today, over 870 million are chronically hungry and undernourished. Food production is already constrained by shortages of land and water, inadequate infrastructure, lack of access to inputs and credit, an increasingly unpredictable climate, and extreme fluctuations in the prices of food and other commodities. It is necessary to increase the food production to meet the growing demand for it. World population is expected to reach 9 billion by 2050 and there is likely to be 1.7 billion more mouths to feed by 2030. Feeding this population sustainably will require substantial changes to ensure the production, distribution and consumption of sufficient nutritious and sustainably produced food. Effective and efficient use information and communication technologies in agriculture and rural development will certainly minimize global demand for food.

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Impact of Leadership Training Programme on Teachers' Attitude towards giving Corporal punishment to Students

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Abstract

An attitudinal change is required to be promoted amongst teachers to prevent them from giving corporal punishment to the students and it is desirable to see whether it is possible to bring about such an attitudinal change through a training and development intervention. In the entry survey conducted at the beginning of the training programme, 41.7 per cent of teacher participants expressed the opinion that punishment should be given to the students to prevent the recurrence of mistakes. After one year of training, 63.2 per cent of the respondents expressed the opinion that corporal punishment is not a method of disciplining the students and stated that punishment should not be given. 84 per cent of respondents as against 40.3 per cent one year ago, stated that they did not give corporal punishment even once in the post training period. It may be concluded that the Leadership Training Programme has succeeded in causing a shift of mind in teachers from 'giving corporal punishment' to 'not giving corporal punishment' for the purpose of disciplining the students.

Key words: *Attitudinal Change, Corporal punishment, Leadership Training*

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Introduction

Disciplining the students is an integral task of a teacher. There is a general belief that giving corporal punishment is an inevitable part of this disciplining process. 'Spare the rod and spoil the child' is the usual chant of many who believe in giving corporal punishment to discipline the students. "Dandam Dasha Guna Bhaveth' which means that corporal punishment results in internalizing ten good qualities in the child is a universally accepted statement among the teaching community. Some teachers believe that corporal punishment should be given to the students for breaking the social norms. Some others believe that it should be given for preventing the recurrence of mistakes. Some believe that corporal punishment should be given to the students to reform them. There are also teachers who feel that corporal punishment should not be given.

Corporal punishment occurs when a parent or educator hits a child with the purpose of educating him. It usually consists of a light blow with the open hand on the buttocks or hand because the child has misbehaved, deviated from the right path or failed to comply with the wishes and instructions or accept the authority of the parents or educator.

In most countries of the world, light corporal punishment is permitted as a way of disciplining and correcting a child. In schools it is less acceptable as a means of discipline and in many countries teachers are not allowed to corporally punish their students. Corporal punishment has been banned in about 90 countries (Benjamin Shmueli 2010).

In order to make learning more interesting and effective, the fear of punishment should be removed from the minds of students. For that purpose, teachers' habit of giving corporal punishment should be changed. A mere legal provision banning corporal punishment will not serve the purpose. It requires an attitudinal change in the teachers and it is desirable to see whether it is possible to bring about such an attitudinal change through a training and development intervention.

This study on the 'Impact of Leadership Training Programme on Teachers' attitude towards giving corporal punishment to students' is an attempt to measure whether a training programme is capable of bringing about an attitudinal change amongst the teachers regarding their habit of giving corporal punishment to the students.

Objective of the Study

The objective of this Study is to assess the impact of Leadership Training Programme on Teachers' attitude towards giving Corporal punishment to Students in the Post Training Period.

Literature Review

Alex Grecu (2006) made a study of corporal punishment in schools by using a panel of data on 50 U.S. States and Districts of Columbia. He observed that corporal punishment has a negative effect on student performance as measured by eight and fourth grades NAEP mathematics test scores.

Benjamin Shmueli (2010) who made a comparative study of corporal punishment given by teachers and parents suggests that parental corporate punishment should be banned by civil law and corporal punishment by teachers should be totally and criminally banned.

Gershoff (2002) reviewed 88 corporal punishment studies conducted over 6 decades. She states that more than half of the studies supported that even common forms of physical punishment are detrimental to childrens' development in a number of areas.

The Report of the South Asia Regional Consultation on the Study of Violence against children prepared by the U.N. Secretary General (UN 2005) categorically states – 'Hitting people is wrong – and children are people too. Corporal punishment of children breaches their fundamental rights to respect for their human dignity and physical integrity. Its legality breaches their right to equal protection under law'.

A report by Save the Children (Jabeen F 2004) cites a study relating to the prevalence of corporal punishment in India. In the study titled 'Butterflies 2003, My Name is Today: A Dossier on Children and Children's Rights Vol II: Children and Protection Issues, New Delhi, India: Butterflies Advocacy and Research Centre' carried out in Chandigarh in 1986-87 it was found that 98.3per centage of parents were in favour of physical punishment and out of 187 school going children aged 6-10 years, 85.5per centage reported receiving beatings at home.

A 1996 Study (Mode 1996) supported by UNICEF found that 66per centage of children in the State of Maharastra reported being regularly punished by their teachers in class. In Tamil Nadu the corresponding figure was 87per centage with similar prevalence figures in urban and rural schools. Thus there is empirical evidence to show that there is wide spread ill treatment of children in India, not only in schools but also within the family.

Randa Mahmoud Youssef et.al. (1998), in their study undertaken to reveal the prevalence and determinants of corporal punishment in middle and high schools in Alexandria, indicate that corporal punishment is used in schools extensively to discipline the students whose behavior doesn't conform with the desired standard of educational institutions.

Richard Dubanoski et.al. (1983) discovered that corporal punishment can lead to more problems than it appears to solve. They are of the opinion that in a classroom characterized by positive mutual regard, teachers can maximize their effectiveness as teachers and students can maximize their effectiveness as learners.

A review of literature indicates that the studies on corporal punishment do not emphasize the relevance of a training programme for bringing about an attitudinal change in the teachers towards corporal punishment in schools. The present study overcomes this limitation by assessing the impact of a Leadership Training Programme on the attitude of teachers towards giving corporal punishment to the students and by assessing their perception about corporal punishment during the pre-training and post-training period. It also analyses the extent of corporal punishment given by the teachers in the pre training and post training period. For that purpose, the following methodology is adopted.

Methodology

In order to make an in depth analysis, the Leadership Training Programme organized by the College for Leadership and Human Resource Development at Mysore for school administrators of Mysore, Mandya, Hassan and Kodagu Districts from 22nd to 26th December 2008 was selected as the number of participants registered for training was more in that region. In all 291 school administrators participated in the training programme spread over 5 days, from 9 a.m. to 5 p.m. The participants were informed about the significance of the study and were assured of the confidentiality of the information furnished by them. One year after the conclusion of training, Questionnaires eliciting information regarding giving corporal punishment to students were sent to all the participants. However only 144 duly filled in questionnaires were received back. Hence the study is based on the information furnished by 144 School administrators. The data was analysed by using the SPSS software. The Leadership Training Programme included a concept on 'punishment' to the students. Case studies were presented to the participants to form a judgment regarding the effect of punishment.

This study analyses the opinion of the participants about punishment before and after attending the Leadership Training Programme.

Opinion about giving Corporal Punishment

The Participants' opinion about giving punishment to students 'before attending' and 'after attending' the Leadership Training Programme is disclosed in Table 1.

Table 1 : Attitude towards giving punishment to students (before Training and after Training) (N 144)

Sl. No.	Opinions	Male		Female		Total	
		Pre-Trg. period	Post Trg. period	Pre-Trg. period	Post Trg. period	Pre-Trg. period	Post Trg. period
		No.	No.	No.	No.	No.	No.
1	Punishment should be given for breaking social norms	25 23.8%	12 11.4%	09 23.1%	05 12.8%	34 23.6%	17 11.8%
2	Punishment should be given for preventing recurrence of mistakes	45 42.9%	16 15.3%	15 38.5%	09 23.1%	60 41.7%	25 17.4%
3	Punishment should not be given	29 27.6%	71 67.6 %	12 30.8%	20 51.3%	41 28.5%	91 63.2%
4	Any Other	06 05.7%	06 5.7%	03 7.6%	05 12.8%	09 6.2%	11 7.6%
	Total	105 100%	105 100%	39 100%	39 100%	144 100%	144 100%

Source: *Field survey*

As stated in Table 1, 41.7 per cent of respondents (42.9 per cent Male and 38.5 per cent Female respondents) expressed the opinion that punishment should be given for preventing the recurrence of mistakes. Another 23.6 per cent of respondents (23.8 per cent Male and 23.1 per cent Female respondents) were of the opinion that punishment should be given for breaking the social norms. 6.2 per cent of respondents (5.7 per cent Male and 7.6 per cent Female

respondents) gave some other reasons such as 'punishment should be given for reforming the students' and 'punishment should be given to deter other students from committing ‘wrong deeds'. Only 28.5 per centages of respondents (27.6 per cent Male and 30.8 per cent Female respondents) stated that punishment should not be given to discipline the students. From the above, it may be inferred that, in the pre training period, majority of respondents were in favour of giving punishment to prevent the recurrence of mistakes.
A considerable shift in the opinion regarding ‘Punishment’ can be observed in the Post-training period of respondents. As stated in Table 1, 63.2 per cent of respondents (67.6 per cent Male and 51.3 per cent Female respondents) expressed the opinion that corporal punishment is not a method of disciplining the students and hence stated that punishment should not be given. The per cent of respondents who expressed that punishment should be given for preventing recurrence of mistakes came down from 41.7 percentages to 17.4 per cent (in the case of Male respondents from 42.9 percentages to 15.3 per cent and in the case of Female respondents from 38.5 per cent to 23.1 per cent). Further, the percentage of respondents who stated that punishment should be given for breaking social norms came down from 23.6 per cent to 11.8 per cent (in the case of Male respondents from 23.8 per cent to 11.4 per cent and in the case of Female respondents from 23.1 per cent to 12.8 per cent). There has been a slight increase in the percentage of participants who gave ‘Other Reasons’ with regard to the reasons for giving punishment.

A shift in attitude from 'Punishment' to 'No Punishment' can be seen in Table 2.

Table 2: Giving Corporal Punishment to Students – Respondents' opinion before and after attending LTP

Gender of Respondents	Opinion about punishment in the Pre Training Period			Opinion about punishment in the Post Training Period		
	Punishment should not be given	Punishment should be given	Total	Punishment should not be given	Punishment should be given	Total
Male	29 27.6%	76 72.4%	105 100%	71 67.6%	34 32.4%	105 100%
Female	12 30.8%	27 69.2%	39 100%	20 51.3%	19 48.7%	39 100%
Total	41 28.5%	103 71.5%	144 100%	91 63.2%	53 36.8%	144 100%

Source: *Field Survey*

A considerable shift in attitude from 'Punishment' to 'No punishment' is visible in Table 2. In aggregate, the percentage of respondents who felt that 'punishment should not be given' was only 28.5 per cent in the pre training period. It comprised 27.6 per cent Male and 30.8 per cent Female respondents. 71.5 per cent of the respondents felt that corporal punishment should be given to the students to discipline them. In contrast, in the post training period, 63.2 per cent of respondents felt that corporal punishment is not the way to discipline the students. Likewise, the percentage of respondents who felt that corporal punishment should be given, came down from 71.5 per cent to 36.8 per cent. Thus, the Leadership Training Programme can be considered to be very effective in creating this shift of attitude of respondents.

A chi square test was conducted to assess whether there exists any relationship between Gender and Attitude towards punishment. The data relating to the chi square test is given below:

Table 3: Measurement of Relationship between Gender and Attitude towards Punishment (Pearson's Chi-Square Test)

	Value	df	Asymp.Sig. (2 sided)	Exact sig. (2 sided)	Exact sig (1 sided)
Before attending LTP	.019	1	.891	1.000	.627
After attending LTP	3.263	1	.071	.082	.054

Source: *Field Survey data*

It appears from Table 2 that Male respondents are more considerate towards students. However, this conclusion is not proved in the Chi square test. The Null Hypothesis of independence of relationship between Gender and Attitude towards punishment is accepted both at the pre training and post training period. In other words, there does not appear to be a significant relationship between Gender and Attitude towards punishment.

A chi square test was conducted to assess whether there exists any relationship between the Opinion about giving corporal punishment and the Age of respondents. The chi square test reveals the data in Table 4.

Table 4: Relationship between opinion about survey corporal punishment and the age of respondent.

Pearson's Chi-Square Test	Value	df	Asymp.Sig. (2 sided)
Before attending LTP	.475	3	.924
After attending LTP	5.849	3	.119

Source: *Field Survey data*

It appears from the above table that the Null Hypothesis of independence of relationship between the Age of respondents and Opinion about giving corporal punishment is accepted both at the pre training and post training period. Hence it may be concluded that there does not exist any significant relationship between the Age of respondents and the opinion about giving corporal punishment to the students.

Extent of corporal punishment given to Students

The respondents were asked to state the number of times the corporal punishment was given by them in the pre training and post training period. The data relating to the same are presented in Table 5, 6 and 7

Table 5 : Corporal Punishment given to Students before and after attending LTP

Pre-Training Period	Male Respondents		Female Respondents		Total Respondents	
	Before Training	After Training	Before Training	After Training	Before Training	After Training
Number of times in a week	Number	Number	Number	Number	Number	Number
Not even once	40 38.1%	86 81.9%	18 46.2%	35 89.7%	58 40.3%	121 84%
1 to 5 times	47 44.8%	19 18.1%	17 43.6%	03 7.7%	64 44.4%	22 15.3%
6 to 10 times	06 5.7%	0 0%	02 5.1%	01 2.6%	08 5.6%	01 .7%
Over 10 times	12 11.4%	0 0%	02 5.1%	00 0%	14 9.7%	00 0%
Total	105 100%	105 100%	39 100%	39 100%	144 100%	144 100%

Source: *Field Survey data*

As per Table 5, in the pre training period, out of 144 respondents, 58 (40.3 per cent) stated that they did not give corporal punishment even once. 64 respondents (44.4 per cent) stated that they gave punishment 1 to 5 times, 8 respondents (5.6 per cent) stated that the extent of punishment ranged from 6 to 10 times. 14 respondents felt that the extent of punishment crossed 10 times in a week. It appears from the data that the female respondents were more considerate towards students. 46.2 per cent of female respondents when compared to 38.1 per cent of Male respondents stated that they did not give any punishment to the students. Again, only 5.1 per cent of them when compared to 11.4 per cent of Male respondents stated that the extent of corporal punishment crossed 10 times in a week. In the post Leadership Training period, out of 144 respondents, 121 forming 84 per cent stated that they did not give corporal punishment even once. 22 (15.3 per cent) stated that they gave corporal punishment 1 to 5 times in a week. Only one respondent stated that the corporal punishment given ranged from 6 to 10 times. In this case also, the Female respondents appear to be more considerate towards the students. A cross verification of data in Table 1 and 5 shows that in the pre-training period, while 103 respondents were of the opinion that punishment should be given, the actual number of respondents who gave punishment numbered only 86. In the post-training period, while 53 respondents stated that corporal punishment should be given, the actual number of respondents who gave punishment was only 23. The fact whether the respondents do not consider minor acts of punishment as real punishment or not is beyond the scope of this study and needs further exploration.

A cross tabulation of Corporal punishment given to the students in the pre training and post training period is made in Table 6. According to Table 6, 58 respondents who were not giving any corporal punishment in the pre training period continued to do so even in the post training period. Out of 64 respondents who used to given punishment 1 to 5 times, 57 constituting 89.1 per cent stopped giving corporal punishment in the post training period. Of the 8 respondents who used to give corporal punishment 6 to 10 times, 2 (25 per cent) stopped giving corporal punishment and 6 (75 per cent) reduced corporal punishment to less than 5 times a week. Of the 14

Table 6: Corporal Punishment given to the students by School Administrators before and after attending Leadership Training Programme – Cross Tabulation

	Corporal Punishment given after attending Leadership Training Programme			
	Not even once	**1 to 5 times**	**6 to 10 times**	**Total**
Corporal Punishment given before attending Leadership Training Programme				
Not even once Count	**58**	**00**	**00**	**58**
percentage within corporal punishment before training	100	0	00	100
percentage within corporal punishment after training	47.9	0	0	40.3
1 to 5 times Count	**57**	**07**	**00**	**64**
percentage within corporal punishment before training	89.1	10.9	0	100
percentage within corporal punishment after training	47.1	31.8	0	44.4
6 to 10 times Count	**02**	**06**	**00**	**08**
percentage within corporal punishment before training	25.0	75.0	0	100
percentage within corporal punishment after training	1.7	27.3	0	5.6
Over 10 times Count	**04**	**09**	**01**	**14**
percentage within corporal punishment before training	28.6	64.3	7.1	100
percentage within corporal punishment after training	3.3	40.9	100	9.7
Total Count	**121**	**22**	**01**	**144**
percentage within corporal punishment before training	84.0	15.3	0.7	100
percentage within corporal punishment after training	100	100	100	100

Source: *Field Survey data*

respondents who used to give punishment over 10 times, 4(28.6 per cent) stopped giving such punishment, 9 (64.3 per cent) reduced it to less than 5 times and 1(7.1 per cent) reduced it to less than 10 times in a week. None reported giving corporal punishment over 10 times in the post training period.

A chi square test was conducted to examine whether there exists any relationship between Corporal punishment given in the pre training and post training period. The results are tabulated below:

Table 7 : Pearson's Chi-Square Test - Relationship between Corporal punishment during pre and post training period

Value	df	Asymp.Sig. (2 sided)
70.017	6	.000

Source: *Field Survey data*

The Null Hypothesis of independence of relationship between corporal punishment given to students in the pre training and post training period is rejected at .000 level of significance. In other words, there appears to be a significant relationship between corporal punishment given in the Pre training and Post training period.

From the data it appears that the Leadership Training Programme has succeeded in causing a shift of mind from 'giving corporal punishment' to 'not giving corporal punishment' for the purpose of disciplining the students.

It may be concluded that through an effective Training Programme, the School Administrators who also act as Teachers, can be made to realize the evils of giving corporal punishment to students and can be motivated to treat the students in a more humane way.

Findings and Suggestions

The following findings have been made in the course of study:

- The leadership training programme helps the participants to identify several areas of concepts and skills which are useful both for school administrators and teachers.
- When scholastic learning is coupled with experiential learning and is followed by practice, the learning becomes easier.
- The quality of practical performance of leadership in the class room by the school administrators can be influenced through concept clarification and skill development as shown by the change in attitude of the school administrators about offering corporal punishment to erring students.

The following suggestions are offered in this connection:

- Make leadership training programme mandatory for all teachers.
- Provide such training to the teachers in the beginning of the career.
- Increase the duration of training.
- Conduct follow-up training programmes

Conclusion

It may be concluded that an effective leadership training programme not only helps the school administrators and teachers in understanding the evil effects of punishments but also in motivating them to change their attitude towards giving punishments to the students. However, as revealed by the study, follow-up programmes are required to bring in permanent changes in the attitude of school administrators and teachers in this regard.

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"Education is the Most Powerful Weapon which you can use to Change the World"

- Nelson Mandela

**

"Imagination is more important than Knowledge as it is the Starting Point of Success"

- Albert Einstein

**

"Innovation is the creation of the new or re-arranging of the old in the new way"

- Michel Vance

**

"Without a sense of teamwork it is really hard to build a great institution"

- Anonymous

Impact of Child Marriage on Community Health: An Empirical Study in Ethiopia

* Dr. Bimal Kanta Nayak

Abstract

Child marriage is not a strange news for anyone. It is a marriage in which a child under the age of 18 years is involved. Though such marriages occur worldwide, they are mainly seen in South Asia. Africa, and Latin America. Child marriage is a harmful traditional practice that perpetuates an unrelenting cycle of gender inequality, sickness and poverty. Child marriage - the result of ignorance and evil social practice - was found during early civilization of humanity. It was considered more appropriate, socially accepted, recognized and prevalent in the primitive period .Child marriage cannot be ruled out even in the era of globalization even today in Ethiopia. There are many problems associated with child marriages such as social, physical, economical and psychological. It can be viewed as a case of human rights violation. Child marriage directly impacts girls' education, health, psychological well-being, and the health of their offspring. It increases the risk of depression, sexually transmitted infection, cervical cancer, malaria, obstetric fistulas, and maternal mortality. The offspring of child marriage includes increased risk of premature birth and, subsequently, neonatal or infant death. However, various studies show that many of child marriages - where the girls are forced to be married before they are socially, psychologically and physically well developed - the marriages through abduction are practised in different parts of developing countries especially in Africa . There are many factors responsible

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for this practice, the most common being poverty, protection of girls, family honour and the provision of stability during unstable social periods, lack opportunities for girls, lack of awareness about adverse health consequences, and the another big problem is the lack of awareness of law and also inadequate implementation of the existing laws. This practice is especially common in rural areas and amongst economically backward families. The daughter is married off at an young age to relieve the families from their economic responsibilities. Prevention of child marriages is imperative not merely from the child and human rights perspective but also in the interest of meeting several national goals and millennium development goals. To stop child marriage, policies and programs must educate communities, raise awareness, engage local and religious leaders, involve parents, and empower girls through education and employment. Successful community interventions, strict enforcement of legislation can also reduce child marriage rates.

Key words: *Child Marriage, Female Education, Social Acceptance*

Introduction

Marriage is a social situation that unites people in a special form of mutual dependence for the purpose of the founding and maintaining a family. As a social practice, it reflects the purposes, character and customs of the society in which it is found .Many societies have norms that limit the age of young girls to enter into marriage, but in some cases the age limit does not take into consideration their physiological readiness for childbearing. Marriage often takes place at an age, much earlier than the legally ratified minimum age.

Child marriage is the marriage of children and adolescents below the age of 18 year. The practice of child marriage is most common in sub-

Saharan Africa, South Asia, specific parts of West Africa, East Africa and South Asia. In the North Africa, the Middle East and other parts of Asia marriage shortly after puberty is common among those living traditional lifestyles .Marriage of female adolescents between sixteen and eighteen years of age also common in parts of Latin America and Eastern Europe.

Prevalence of Child Marriage practices in Ethiopia

Ethiopia is one of the poorest countries in the world. Approximately 81 per cent of its population lives on less than US $2 a day and 44 per cent of its population is under the age of 15 years. In this country the life expectancy fell to 49 years in 2005 (world fact book 2005), mainly due to the growing HIV epidemic.

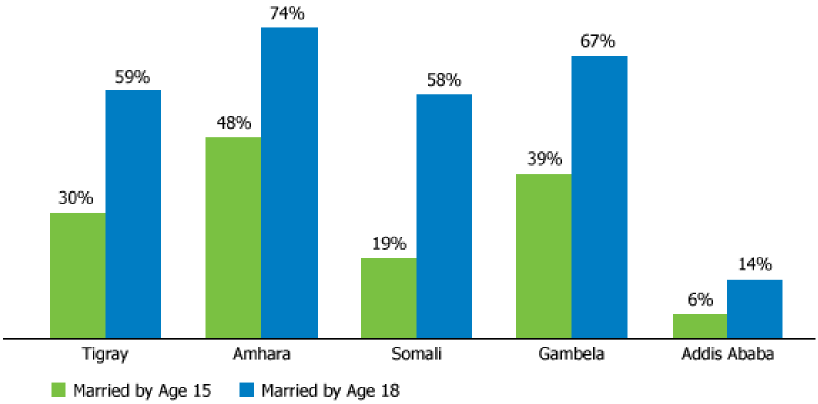
The 2008 Follow-up National Survey on the Harmful Traditional practices in Ethiopia revealed that the prevalence of child marriage in Ethiopia has decreased at national level to 21.4 per cent from 33.3 per cent of the 1997 baseline survey. A recent study in seven regions/ states conducted by Population Council on Ethiopia Gender Survey also reported that the highest rates of child marriages occurred in the Amhara region, 52 per cent of respondents being married by the age 15 years (Population Council, 2010).

The "Essential Conditions of Marriage"(section 2, article 6-16) of the revised family code, (proclamation 2000),article 7 specifies the legal marriage age for both boys and girls as follows, 'neither a man nor a women who has not attained the full age of 18 years shall not have a concluded marriage'. Despite this law, the country is known for one of the most severe crises in the world viz., child marriage.

In **Ebinat Woreda** (district, where the present study is conducted) child marriages of several harmful traditional practices towards woman are commonly practiced. This induced to identify the cause and some problems and its solutions. Parents often approve of their

their daughters being married when they are as young as 10 to 12 years of age, even though the legal age of marriage in Ethiopia is 18 years. In Ebinat Woreda (district) child marriage of girls is very common and seen as a way to improve the economic status of the family through marriage as husbands often are financially more secure. Some parents forced their daughters to be married with someone without consulting them.

Figure 1: Age at First Marriage or Union for 20-to-24-Year-Old Females by Region

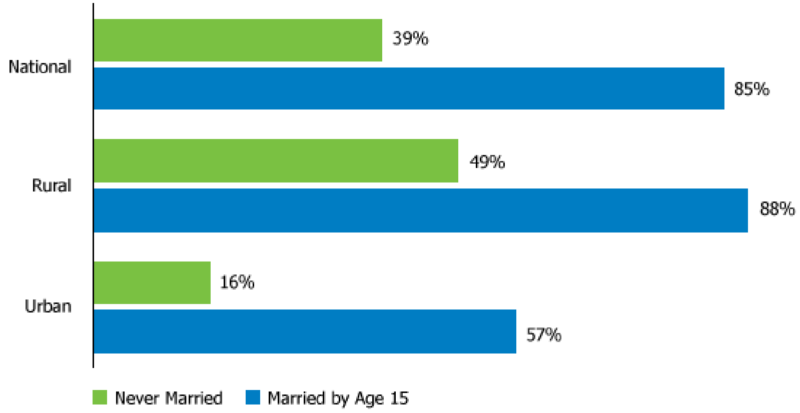


Sources: *Population Council and UNFPA, The Adolescent Experience In-Depth: Using Data to Identify and Reach the Most Vulnerable Young People: Ethiopia 2005 (New York: Population Council, 2009).*

Note: Figures are based on the 2005 Demographic Health Survey in which women ages 20–24 reported being married by age 18 and age 15.

Ethiopia has one of the highest rates of child marriages in the world, with one in two girls marrying before her 18th birthday and one in five girls marrying before the age of 15. However, prevalence rates vary greatly by region(state) and are often higher than national figures, such as in the Amhara region(state) in northern Ethiopia, where almost 50 per cent of girls are married by age 15 (see Figure 1). Although the Ethiopian Constitution explicitly states that "marriage shall be entered into only with the free and full consent of the intending spouses" and the minimum legal age for marriage is 18 for both boys and girls, the laws are not always enforced. Early marriage remains a deep rooted tradition in Ethiopian communities, perpetuated by poverty, a lack of education and economic opportunities, and social customs that limit the rights of women and girls. (Alexandra Hervish April 2011).

Figure 2: per centage of 15-to-24-Year-Old Females' (Who Are Illiterate), Marital Status



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Note: Figures are based on the 2005 Demographic Health Survey in which women ages 20–24 reported being married by age 18 and age 15.

Harmful Consequences of child Marriage

The consequences of child marriage are physically, emotionally, and socially devastating. An analysis of several indicators from the 2005 Demographic and Health Survey (DHS) in Ethiopia (the most recent DHS) shows that marital status greatly influences the sexual experiences and reproductive health of girls and young women in Ethiopia. Married girls are significantly more likely to be sexually active than their unmarried peers. (73 per cent versus 0.3 per cent) Because of tremendous social pressure on them to prove their fertility these young brides become young mothers with the attendant dangers of early childbearing. In addition, only 21 per cent of 15-to-24-year-old married females (including those who were separated, divorced, or widowed) reported about using a modern method of contraception. With limited autonomy to make decisions and influence sexual relations, married girls face a greater risk of gender-based violence and marital rape. Moreover, young mothers are especially vulnerable to poor reproductive health outcomes, including prolonged and obstructed labor, obstetric fistula, and death.

Objectives of the study

1. To estimate the current prevalence of early marriage in the study area.
2. To study the socio-economic, educational and psychological factors leading to child marriage.
3. To make programmatic recommendation that will help policy makers to design interventions to mitigate the consequences of child marriage,.

Methodology

Area of the study

The study has been conducted in fine Kebeles(blocks) of Ebinat woreda (district) in Amhara, Ethiopia .Ebinat Woreda is located in the South Gonder administrative zone with elevations ranging from 1800-2150 meters.

Ebinat Woreda (District)

It is located 122 kilometers from Bahir Dar, the capital of the Amhara region and 714 kilometers away from Addis Ababa. Of the 249,427 hectares of land in Ebinat, 62,350 hectares are cultivable and 37,846 hectares are designated grazing lands. According to the 1996 population census, Ebinat has a total population of 259,053 of which 51.3 per cent are male and 48.7 per cent female. There are 35 rural kebeles(blocks) and 2 urban kebeles, in Woreda. 93.8 per cent of the total population resides in rural areas. Livelihoods are predominantly agriculture based, with 97 per cent of the population earning their livelihood from mixed farming (crop and livestock production), 3.35 per cent from wage labor and 1.25 per cent from petty trading. Crops grown include teff, chickpea, barley, maize, sesame, sorghum, lentils, beans, wheat and potatoes.

Significance of the study

The researcher intends to give current and timely information about the causes and consequences of child marriage in the area of Ebinat district. The study incorporates large data sets and relevant variables on the consequences of early marriage. This may make some contribution for policy makers and interested researchers by providing information concerning the consequences of child marriage.

Field work and Data collection

The present study is based mainly on primary data collected through survey. The field work was carried out in the month November 2012 for a week covering the five kebeles (blocks). These five kebeles of the district have totally 18628 women population from among them. 60 women were selected by random sampling method. It covers 0.322 per cent of the total sample population of civil servants who worked in that blocks.

Panel 1: Population and sample distribution Chart-Women

Sl.No	Kebeles (Blocks)	Total population			Questionnaire administered		
		M	F	Total	M	F	Total
1	Gela matebia	-	3198	3198	-	11	11
2	Giman	-	3528	3528	-	11	11
3	Deber	-	3725	3725	-	12	12
4	Selamaya	-	4007	4007	-	13	13
5	Zeha	-	4570	4570	-	13	13

Source: *Field Survey*

In addition, out of the total 80 Government servants of the area, 20 Government servants were selected by the same sampling method

Panel 2: Government (Civil) Servants Population and sample distribution

Sl.No	Kebeles (Blocks)	Total population			Questionnaire administered		
		M	F	Total	M	F	Total
1	Gela matebia	9	5	14	2	2	4
2	Giman	8	8	16	3	1	4
3	Deber	9	7	16	2	2	4
4	Selamaya	11	7	18	3	1	4
5	Zeha	11	10	21	2	2	4

Source: *Field Survey*

Data analysis and interpretation

The data have been collected by employing the interview guide from different sources. The data pertaining to the subject matter was collected through face to face interview with different categories of people. A set of questionnaires containing both close –ended and open- ended questions, were administrated to gather data from 60 female respondents (100 per cent) and 20 government servants (100 per cent) living in that kebele(blocks). Analysis and interpretation of the data was based on the responses obtained from the respondents and the data obtained form the documents Women Affairs Office. The subject matter of the study has been categorized into three major groups, the victims, government servants and family members. The interview schedule was administered to each of the group to summarize the prevalence age of child marriage, the socio-economic, educational and psychological factors leading to the consequences of child marriage and the problem faced by victims in their day to day life.

Characteristics of respondents

Description of the characteristics of the target population gives some basic information about the sample population involved in the study. The following Tables, contain the information regarding the general, educational ,economic status and attitude of women and civil servants on child marriage.

- **Child Marriage and Gender**

  According to the personal observations as well as the findings, it can be seen that all respondents are females constituting 100 per cent. This shows that the female participation in child marriage has been indeed a common characteristic features in the study area. It happens just because of ignorance, lack of awareness, and the relaxation of the existing law of the land in Ethiopia.

- **Child Marriage and age group**

  With regard to the age of the respondents, majority of the victims belong to the age group of 11-17 year (58.3 per cent), where as 28.3 per cent of respondents come under the age group of 18 – 24 and 13.35 per cent of respondents belong to 25- 31 age group. Regarding the government servants, 12 respondents (60 per cent) are male and the rest 8 respondents

(30 per cent) of them are female. This shows that male participation in the study area is greater than female under 'Government Servant' category. One of the previous studies showed that, in Ethiopia, nearly one in five girls is married by the age of 15, and some girls are married as young as 7 years of age. The rural Amhara region, where 43 per cent of girls are married by the age of 15, has one of the highest child marriage rates in the world. Three out of four girls are married by the time they turn 18 in this region.

- **Attitude towards child marriage**

  Majority of the women respondents (26 respondents, 43.4 per cent) opine that child marriage is a bad custom. Hence the attitude of women towards child marriage is found negative in the family as well as in the community. As far as the attitude of government servants towards child marriage is concerned 17 respondents (85 per cent) feel that child marriage is a bad custom and among others, Two respondents (10 per cent) feel 'low' and one respondent (5 per cent) expressed 'medium' opinion about the child marriage. Hence, the government servants have negative attitude towards child marriage. They feel that it affects educational, psychological and economical aspects of female victims.

- **Child Marriage and Economic status**

  The study shows that a large portion of victims i.e., 40 respondents (66.7 per cent) has lower economic status, 12 respondents (20 per cent) have medium economic status and 8 respondents (13.3 per cent) belong to higher economic status. In Ethiopia's Amhara region, girls face tremendous challenges. The most common age for a girl to marry is 12. One of the respondents by name Himanot Yehewala, who was married five years ago at the age of 13, expressed her feelings in this way: "I wanted to get an education but my parents were determined about my marriage with somebody". Poverty plays a central role in causing and perpetuating early marriage.

Table1: Responses of the respondents

Sl.No	Question and responses	Women victims	
1	Whether child marriage affects health status		
	Yes	15	75
	No	3	15
	No response	2	10
	Total	20	100
2	Whether child marriage accepted		
	Yes	15	25
	No	43	71
	No response	2	3.4
	Total	60	100
3	Whether child marriage affects economic status		
	Yes	39	65
	No	14	23.4
	No response	7	11.6
	Total	60	100
4	Whether child marriage affects education status		
	Yes	41	68.3
	No	13	21.7
	No response	6	10
	Total	60	100
5	Whether child marriage affects health status		
	Yes	37	61.6
	No	23	38.4
	Total	60	100

6	**Civil servants**		
	Whether child marriage accepted by you		
	Yes	-	-
	No	20	100
	Total	20	100
7	Whether child marriage affects economic status		
	Yes	17	85
	No	3	15
	Total	20	100
8	Whether child marriage affects education status		
	Yes	18	90
	No	2	10
	Total	20	100

Source: *Field Survey*

- **Child marriages and Health status**

  Health problem can be caused by many factors. As far as the child marriage is concerned the study reveals that, 37 women respondents (61. 6 per cent) feel that child marriage leads to poor health and 23 respondents (38.4 per cent) of victims do not realize that health problem is caused by child marriage. But 15 government officials surveyed (75 per cent) feel that health of the victim is affected by the child marriage. But only 3 government officials (15 per cent) do not agree. Two of them (10 per cent) gave no response. It has been observed that the victims of child marriage suffer from a multitude of physical, psychological, economic and social harms. As they have not achieved full maturity, they are not psychologically and physically ready to be the wives and mothers .Their first sexual experience is often forced and traumatic with pregnancy and childbirth resulting in complications that harm their health. Most of the girls who end up in divorce are obliged to join their parents, especially those having a child, are often isolated and degraded by their family and the community. Some are forced to flee to towns where they end up as domestic house workers or commercial sex workers, becoming vulnerable to different forms of violence and abuse and subsequently exposed to different sexually transmitted infection including HIV and AIDS.

- **Child marriage and Social acceptance**

  The above Table 1, shows that majority of women respondents (43resondents, 71 per cent) have negative attitude towards child marriage, where as 15 women (25 per cent) women have positive thinking. But all the 20 government officials(100 per cent) surveyed express negative attitude towards particularly, the child marriage. So, child marriage is not accepted officially but practised traditionally especially in rural areas in Ethiopia and Ethiopian law of child marriage remains silent in rural areas. The strongest reason for child marriage is the desire or need to maintain the family's good name and social standing. Despite the legal sanctions against marriage before age 18 and the growing awareness among leaders and educators that it is harmful to girls and their families, parents continue to insist upon marrying their daughters in their mid-teens and go to some lengths to resist late marriages.

- **Child marriages and economic condition**

  Child marriage has a greater impact on the economic condition of women as 65 per cent (39 respondents) of the victims say that child marriage is the one of the main causes of economic deterioration of the family, leading to poverty. 14 respondents (23.4 per cent) are of the opinion that child marriage has nothing to do with family economic condition. With regard to the child marriage and economic condition, 17 government servants (85 per cent) say that the economic condition of the family of the victim is one of the main causes for child marriage, whereas only Three respondents (15 per cent) from government officials category deny it. Child brides-already poor -are isolated and denied of education and employment opportunities, making it difficult for them to break out of the cycle of poverty. It is an obstacle to alleviating from poverty and hunger.

- **Child marriages and Educational status**

  Majority of women surveyed (41 respondents, 68.3 per cent) believe that child marriage is one of the major factors affecting the educational status of females, but 13 respondents (21.7 per cent) deny it. And majority of the government servants (18 respondents, 90 per cent) are of the opinion that child marriage affects the education of victim, where as only Two of government officials (10 per cent) disagree with it. Most of the girls engaged in marriage at an early age are either deprived of their right to join school or obliged to drop out of school.

Table 2 : Possible Factors responsible for child marriages : Respondents' view

Sl.No	Factors	Women		Government servants	
		Frequency	per cent	Frequency	per cent
1	Low level of awareness	56	93.3	19	95
2	Marriage with kinship	43	71.6	17	85
3	Poor economic status of women	39	65	18	90
4	Gender inequality	28	46.7	20	100

Source: *Field Survey*

The above Table shows that 56 women victim respondents (93.3 per cent) and 19 government servants/respondents (95 per cent) claimed that the low level of awareness led to child marriage.

The other possible factor for child marriage, as stated by the respondents, is marriage with kinship. About 43 respondents (71.6 per cent) stated this reason whereas 17 government servants (85 per cent) express the same feelings as the victims. Another factor viz., poor economic status of women was the opinion of 39 women (65 per cent)and 18 government servants (90 per cent).

Gender inequality is the other possible factor for child marriage, according to 20 women (46.7 per cent) and 20 government servant (100 per cent) respondents

Findings and Suggestions

- Low awareness of the society about the evils of child marriage is found to be one of the major factors. Another reason among the major factors behind the practice of child marriage is found to be the deep rooted traditions and socio cultural concerns prevailing in the Amhara region. There is an old traditional belief that a girl will become over aged for marriage if waited till she gets matured, which would cause embarrassment to the family and thus represents a failure on the part of her parents.
- Lack of economic stability and strength is another major reason influencing the child marriage. Ethiopia is well known as the land of drought and poverty .There is extreme poverty found even today both in rural and urban areas. This encourages poor people to think of early marriages for their daughters. The practice of bride wealth, in which the girl's family receives a payment from the groom's family in marriage, is still a common scene.
- The study shows that majority (61.6 per cent) of child marriage

victims face health and psychological problems. They undergo a greater risk of depression, anxiety, and bipolar disorder. Child marriage has also resulted in: increased risks of sexually transmitted diseases, cervical cancer, malaria, death during childbirth, and obstetric fistulas.

- Majority people have accepted the practice of child marriage in Ethiopia. The factors responsible for people to accept child marriage in their community in Ethiopia is the economic conditions of the land. The country is well known internationally as land of poverty and drought. Poverty plays a central role in causing and perpetuating child marriage. Poor families in the country often lack resources to support healthy alternatives for girls, such as schooling.
- The study reveals that all women are not treated equally in education (68.3 per cent) as compared to their male counterparts in their family and community. Most of the girls engaged in marriage at an early age are either deprived of their right to join school or obliged to drop out of school. Lack of education and the huge age difference between the girls and their husbands put them at disadvantage in negotiating and bargaining with their spouses.
- The findings of the study indicate that most of the victims of child marriage have negative attitude towards child marriage in their community. The women victims of child marriage experienced, learnt and suffered in their life and undergo many difficulties in their day to day life. It makes them to view child marriage from a negative approach. Because, most of the girls end up in divorce or obliged to join their parents, especially those having a child. Further, they are often isolated and degraded by their family and the community.
- The study also indicates that the attitudes of parents towards child

marriage with kinship is acceptable for the community. The fact behind this reason is that, girl's parents believe that kinship will take care of their daughter if she is marriaged in early age. But the girl's parents never realize the impact of child marriage and the kind of sufferings their daughter has to undergo throughout of her life, which the victim only has to experience it. .

- The study shows the domination of male over female due to gender inequality. The domination against women is very common in child marriage system in Ethiopia.

Recommendation

- The study showed that the awareness and knowledge of the communities on negative consequences of child marriage is significantly low, which calls for the need for designing culturally appropriate strategies towards the need for change in the practice among the parents and other community leaders. Intensive community conversations and dialogues, visual and audio education materials and radio programs that discuss the dangers associated with child marriage and the benefits of delaying marriage could be used.
- The study revealed a major gap between the law of the land and its enforcement, which is also manifested through the high prevalence of the practice. Informants also pointed out that in some cases there is ignorance among the law enforcement bodies in taking timely actions against reported child marriage cases, which requires attention.
- The study revealed that people in Ebinat district where the study is conducted lack knowledge on legislations against child marriage. This calls for intensive community awareness interventions on the specific laws pertaining to child marriage, along with ensuring the enforcement laws.

- The findings revealed that in the study area, The religious leaders and elders have high acceptance from and considerable influence on the community. Homogeneity of the population in the study district in terms of religion and ethnicity gives an opportunity for using religious leaders as change agents for changing the social norms among parents pertaining to child marriage practice.
- Programmes of training local resources including schools, teachers, community groups, and volunteers, and supporting them to conduct community based initiatives could contribute in bringing out a transformation of the beliefs around child marriage.
- Public need to be sensitized to support girls' education. The present research suggests that access to school for girls is crucial in delaying marriage and enabling them to decide their own destinies.
- Families in the intervention areas who stood against the child marriage practice and encouraged delayed marriage for their children, and those girls who refused for child marriage should be rewarded in some form, as way of formal recognition and to point them out as role models in their communities.
- Most interventions in the study area targeted on prevention activities against child marriage. Response intervention programmes for those victims of child marriage including those girls with pregnancy and delivery related health complications, those married girls, and support programs for reintegrating those girls running away from child marriage should be designed.

Conclusion

This study has shown that child marriage is a well-accepted and a deep rooted cultural practice in the district. Despite the country's legal provisions against child marriage, it is widely practised in the study area violating the basic human rights of girls. In the study, child marriage practice was found less likely or non-existent for boys. It targets girls as young as 10 - 12 years of age.

The effects of child marriage are plainly evident within communities of the studied district under study where the practice is common. The basic rights of girls are violated – as they are denied of education, family decision making, having their own income and access to other service. As a result of the early marriage their health is also threatened. In addition, they are denied the right to decide their own marriage partner and when to get married and start a family.

The multifaceted problem associated with child marriage calls for particular attention and collaborative action. The findings of this study gave the situation only at the surface of the problems. There are several areas of particular concern where extensive research and intervention programs at different level might be required.

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"You need to be aware of what others are doing, applaud their efforts, acknowledge their successes, and encourage them in their pursuits. When we all hep one another, everybody wins"

- Jim Stoval

Payment and Settlement Systems in Indian Banking Industry : A study on Pre and Post Electronic Period Experience

*** K. Prakash Kamath**

Abstract

In the present economic environment in general and business world in particular, the importance of an efficient payment and settlement systems of financial obligations can not be over emphasized. Like any other process, the present system of payment and settlement has passed through a series of changes from simple barter to highly advanced electronic medium. Today there is a bouquet of payment and systems to suit the requirements of all types of customers, purpose and segment. However the latest trend in payment and settlement systems through electronic form is fast catching up in India and rest of the world. is payment through the electronic form. In India, RBI has been trying very hard to push through the reforms in the payment and settlement systems on account of the benefits derived from the use of technology and its development. RBI has been sharing and signaling the expected developments in line with its objectives of the new system.

An effort has been made in this paper to trace the development of payment and settlement system of financial obligation over the period of time, e.g., from cash to recent electronic media. The study also throws light on the issue of shifting from paper based to electronic based payment and settlement system.

Key words : *Hundies, Clearing house, Negotiable instruments, MICR technology, SANKNET, INFINET, RTGS, IMPS, NACH, ABPS, E-BAAT*

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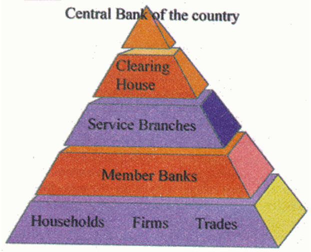
An efficient payments system functions as a lubricant in speeding up the liquidity flow in the economy and creating a momentum for economic growth. A smooth, well-functioning payments system not only ensures efficient utilisation of scarce resources but also eliminates systematic risks. It assumes importance in the context of domestic financial sector reforms and global financial integration.

Barter system preceded the introduction of money. Use of money for settlement of payment obligations has a very long history. However, Barter co-exists with monetised economy, but cash is the most readily accepted medium of exchange in all modern economies (legal tender) which brings about irrevocable settlement. There are, however, certain disadvantages associated with the use of cash like fear of loss/theft, zero return on holding, insurance cost, security risk in carrying cash, transportation costs etc.

The requirements of a modern economy in regard to settlement of transactions are diverse and involve large value payments. External trade involves payments in different currencies which cannot be completed by simple cash transfer. Therefore, a need for additional forms of payments, which can facilitate with improved financial intermediation and expansion of financial instruments was felt. This led to the use of cheques and other paper based instruments as well as the electronic instruments. Due to growing financial intermediation in the recent times, these instruments have become important modes of payment in most of the countries.

Individuals, business entities or governments issue cheques on their banks in discharge of their payment obligations and the recipients would then get the funds through their own banks. As the number of banks grew over time, the volume of instruments exchanged increased substantially. Consequently, as also to have an orderly means of transfer of payment instructions among banks at a location, a common set of practices and mechanisms of exchange had evolved. The payment instruments routed through financial intermediaries involve book entries at various levels to transfer funds from one party to the other. Whenever non-cash payment instruments are involved, they are accompanied by a chain of related fund transfers and book entries and messages. Banks in turn need an intermediate agency like clearing house where these instruments can be exchanged and the financial claims can be settled through a settlement bank, which is usually the Central Bank of the country.

Clearing Houses facilitate the exchange of instruments and processing of payment instructions at a central point among the banks. Clearing Houses-manual and paper based in many advanced countries have gradually extended their range of activities to include automated (ACH) and electronic means for settlement of payment transactions.



The payments system has a multiplicity of layers where several levels of intermediation occur in the transfer of funds from one person and/or institution to another. The structure of the Payments System can be visualised as a Pyramid, with linkages among different tiers of the payment intermediaries. At the base are the non banks whose assets are diverse, including bank notes and deposits and include both cash and non cash payments. Banks are at the intermediate level. The Clearing House and the settlement bank are the financial intermediaries who channel the funds flow between the banks. At the apex is the Central Bank of the country (RBI) which has the settlement accounts of the banks.

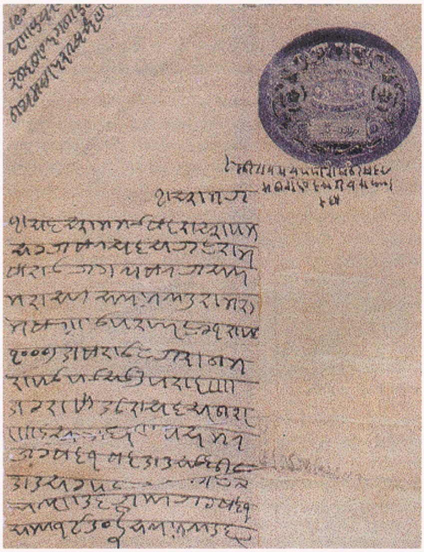
In the Payments System Pyramid, the Central Bank is the settling bank maintaining settlement accounts for banks and these accounts are used by the banks to discharge their obligations amongst themselves. They provide the basic stability to the settlement process as the Central Banks cannot fail.

Evolution of Payment Systems in India – Pre-British period:

The earliest payment instruments known to have been used in India were coins, which were either punch-marked or cast in silver and copper.

Early Punch marked Coin (Courtesy - Museum Cell, RBI)

In ancient India, loan deed forms called 'Rnapatra' or 'Rnalekhya' where in use. They contained details like the name of the debtor and the creditor, the amount of loan, interest rate, repayment condition and period of repayment etc., During the Buddhist period, they were called 'inapanna', Mauryan period 'Adesha', and the Mughal period they were called 'Dastawez'.



Nineteenth century Period Hundi (Courtesy - Museum Cell, RBI)

Hundis were used as remittance instruments (to transfer funds from one place to another); as credit instruments (to borrow money [IOUs]); for trade transactions (as bills of exchange). Hundis were of various kinds and each type had certain distinguishing features.

The princely states of India had their own distinct coins e.g. the Arcot Rupee coin struck by the Nawab of Arcot in the Madras Presidency. By 1740, the Europeans had secured the privilege of coining this rupee, and the coins came to be known as English, French and Dutch arcots. In 1835, the East India Company introduced the Company's Rupee to bring about uniformity of coinage over British India.

Evolution of Payment Systems in India – British period

The modern 'Paper money' has its origin in the late 18th century with the notes issued by private banks and semi-government banks. The Paper Currency Act of 1861 conferred upon the Government of India the monopoly of Note Issue bringing an end to the privilege of note issues enjoyed by the private and Presidency Banks.

The private banks and the Presidency Banks introduced other payment instruments in the Indian money market. Cheques were introduced by Bank of Hindoostan in 1770. Post Bills were introduced by the British in 1827. These were Inland Promissory notes issued by the bank on a distant place, the holder of which would be paid on acceptance after a specified number of days. Trading in bills of exchange became one of the items of business of Bank of Bengal from 1839.

In 1881, the Negotiable Instruments Act (NI Act) was enacted, formalising the usage of instruments like the cheque, the bill of exchange and promissory note. The NI Act provided a legal framework for non-cash paper payment instruments in India.

With the steady growth in volumes of trade and commerce, there was a growth of public confidence in the usage of cheques and transactions through payment instruments. This necessitated an organised cheque clearing process. In 1921 the Imperial Bank was setup and settlement was done through cheques drawn on that bank. The Bombay Clearing House was conducting clearings in Bombay with uniform procedures and charges for collection cheques and other instruments were adopted by the Bombay Clearing House in 1941-42. After the setting up of RBI under the RBI Act 1935, the Clearing Houses in the Presidency towns were taken over by RBI.

Evolution of Payment Systems in India – Post-British period

Currency constitutes 19 per cent of M3 represented in India, as against 6 to 7 per cent in advanced countries and it is supplemented by cheques and drafts for payments in commercial transactions. Various other paper instruments like a Banker's cheque, Payment order, Payable 'At Par' cheques etc., are also used to cater to the specific payment needs. The statutory basis for these instruments was provided by the Negotiable Instruments Act, 1881 (NI Act).

Cheques were not very popular in the system of settlement for several reasons like trading with strangers, dishonor of cheque, delay in realization etc. This gave birth to DDs/Bankers cheques etc., which are a pre-paid Negotiable Instruments, wherein the drawee bank undertakes to pay in full when the instrument is presented for payment. Traveler's cheques, 'Payable at par' instruments, issued for periodic interest on fixed deposits and dividend are the different forms of such instruments

All the above payment instruments are paper based and require to be tendered at specific banks for payment either in person or through clearing. Which they often lead to delays in payment. To overcome this, telegraphic transfer (TTs) was introduced in which a cipher code was used to transmit message for transfer of funds.

With the change in tendency of the people to invest in financial assets like shares and debentures, rapid expansion of bank branches in 1970s and the consequent spread of banking have led to the growth of cheque volumes. This substantial increase in the volumes of cheques necessitated upgrading the existing infrastructure for exchange and settlement from manual clearing arrangement to more efficient and electronically driven systems. Manual sorting and listing of instruments resulted in long delays and errors in computation of the total claims and the problem of un-reconciled entries between the banks.

Another important payment instrument which is widely popular is the Money Order service offered by the Department of Posts, a point-to-point delivery of funds in which messages are sent through Telex or Telegraph. The Postal Orders are issued denomination-wise.

Payments and Settlement System Reforms in India.

RBI has taken up the work of reforms in the payment and settlement systems for the country with the objective of ensuring efficient and faster flow of funds among various constituents of the financial sector. The driving force behind all the initiatives has been 'the technology', which has ensured all major covenants of a safe, efficient and secure payment and settlement system.

The present scenario is such that all payment systems - paper to electronic - need to be developed simultaneously to reduce the use of cash in the economy and move towards a "less-cash" society by greater adoption of electronic modes of payments. If the decline in cheque usage is managed and actively discouraged in a structured manner, the results could be achieved in a shorter time-span and also ensure that no particular section of society is marginalized due to these developments. Further, it could also pave the way for a structured migration and adoption of electronic payments by all sections of society.

The RBI had embarked on technology based solutions, coupled with the introduction of new payment products in the latter half of the twentieth century - such as

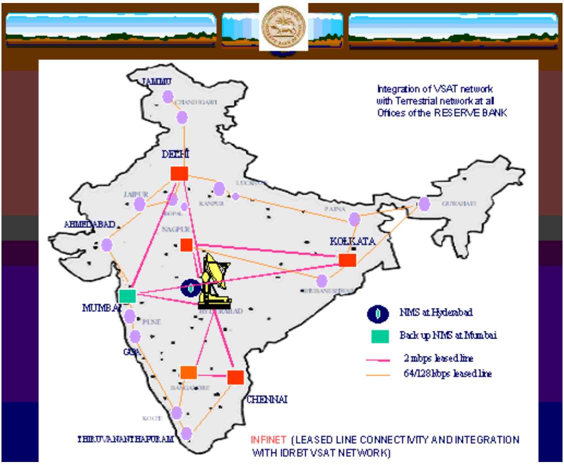
- Computerised settlement of clearing transactions,
- Use of MICR Technology and Image for cheque clearing,
- Operationalisation of BANKNET - a leased line terrestrial network,
- The computerisation of Govt. A/cs and accounting of Currency Chest transactions.

The new payment products introduced over the last few years included the two-way inter-city cheque collection at the four metros and one-way inter-city cheque collection by clearing houses managed by the RBI/SBI, ECS, EFT and Delivery versus Payment (DvP) for Govt. Securities transactions.

A Payment Systems Group was constituted in Feb 1998 - with the focus of attention on a System Design of an integrated payments, Payment instruments, Electronic banking systems, Clearing and settlement arrangements, Technological infrastructure, Legal issues, Monetary policy implications, Change management, re-engineering of the process and procedures and responsibilities of banks and to track the progress in implementation of the systemically important Payment System projects.

The consolidation of the existing payment systems revolves around strengthening Computerised Cheque clearing, expanding the reach of ECS and EFT - by providing for systems with the latest levels of technology. The elements in the developmental strategy are the opening of new clearing houses - to be managed through the INFINET; optimising the deployment of resources by banks through

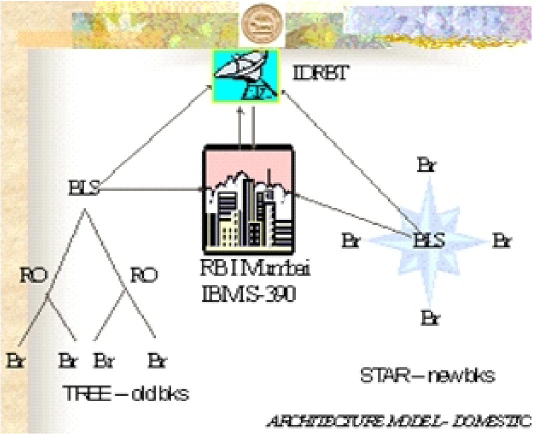
- RTGS System; Centralised Funds Management System (CFMS); Negotiated Dealing System (NDS) and the Structured Financial Messaging Solution (SFMS).

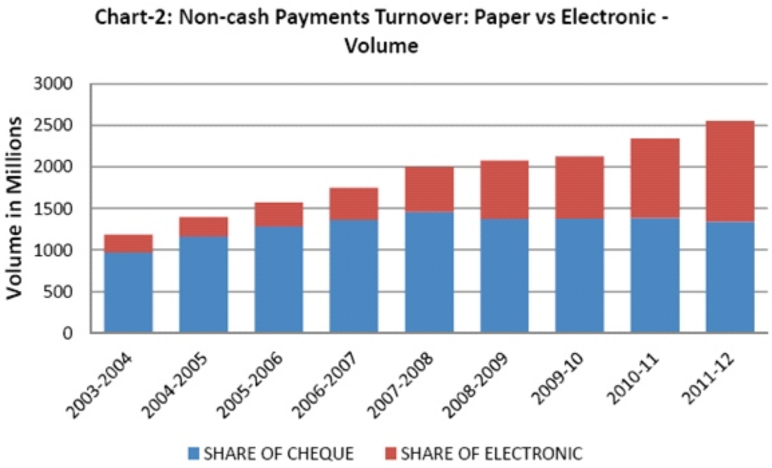


INFINET - Network Diagram

Development of corporate intranets by banks, and CBS making extensive use of INFINET for intra-bank intercity connectivity is another focus area. The pictures depicted below give a graphic representation of the INFINET and the connectivity of banks

Connectivity of Banks





Source : *RBI Annual Report*

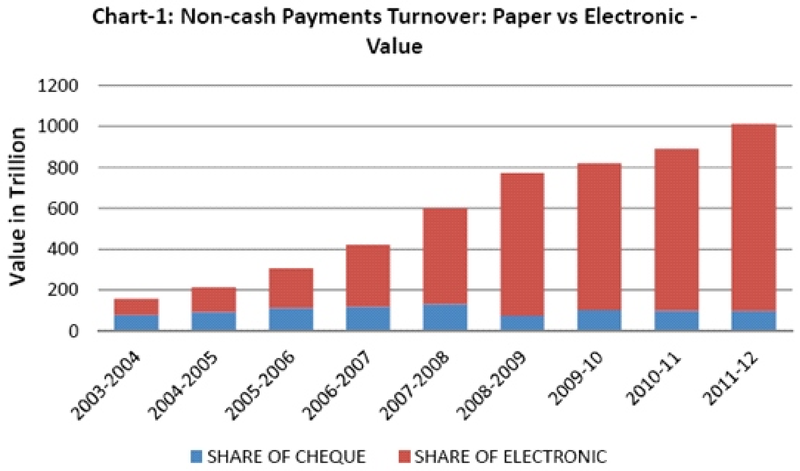
Reasons for High Level of Cheque Usage in India

The migration from cheque usage to electronic mode is easier said than done. The reasons to continue usage of cheques, despite developments in electronic payments are:

- Habits die hard. Technology changes faster than the mind set. Migration from cash to cheque may be a simple step involving movement from one physical instrument to another. Hence, even as newer electronic forms of payments are introduced, widespread adoption of such modes takes time.
- Ease of issue - Only the beneficiary name is required as against information such as account number, name of bank/branch for e-payment and beneficiaries are also not comfortable in parting such details. Further, cheques enable anonymity in payments through use of bearer instruments.
- Mismatch between the supply and demand for electronic payment modes, low levels of accessibility and awareness of electronic payment systems hamper adoption of electronic payments. User apprehension of using a 'new' mode of

Status of Cheque Usage in the Country

The payments eco-system in the country is gradually moving from a purely cash and cheque-based scenario to electronic payments. With the RBI leading the change, the payments scenario is set to move towards a 'less-cash' society where access to various safe, efficient, accessible electronic payment services. It is heartening to note that the average y-o-y growth in electronic payments is nearly 30 per cent since 2003 in terms of volume, while value wise, electronic payments, dominate over the non-cash payments turnover.



Source : *RBI Annual Report*

However, in absolute terms cheque volumes continue to be high at 52 per cent of total payments turnover. Significantly, the share of cheques is showing a declining trend.

While this high cheque volume is attributed to the low cost and efficient cheque clearing infrastructure in the country as also the overall growth in the economy. It is nevertheless desirable that such incremental transactions take place in electronic form rather than through cheques and is desirable to migrate existing cheque usage also to electronic form.

payment and resistance to move from their 'comfort zone' of using cheques, lack of knowledge of online transaction process apprehensions regarding security issues in electronic payments etc., are some of the other resistant factors for the use of electronic mode of payments.

- Low cost of issuing of cheques, as most banks offer some number of cheque leaves to the borrower free of cost. Whereas payment originator has to incur some charges while initiating electronic payments.
- Electronic payments are 'credit push' in nature wherein the payer should have the requisite funds at the time of initiating the payment. Cheque issuance does not come with any such compulsions! Further the payer will have control over the timing of the payment.
- Physical record of payment is maintained when Cheques are issued, which is not so under electronic payments. These fears play on people's choice of mode of payments, especially among those who are not so comfortable with on-line transactions.
- Ceiling limit on the amount of transactions imposed by the banker/customer for safety reasons also creates undue hassles and in such cases, the users prefer cheques electronic mode.
- Lack of awareness among the public about the availability of protection for electronic modes under the Payment and Settlement Systems Act 2007 similar to those available for physical instruments.
- Customers are comfortable with cheque system where in majority of the cheques are cleared (high speed clearing) with T+1 clearing cycle and they are content with the present electronic system.

A survey revealed that organisations continued to accept cheques for following reasons - it is easier to match payments with applications / invoices, making it easy for customers to make a payment. Organisations issued cheques to facilitate making of irregular or large or on-off payments, an opportunity for payment float, etc.

The Need for the 'Managing' the Decline in Cheque usage

Paper-based systems such as cheques and cash come with a considerable cost to the society. High cheque (and cash) usage involves not only financial costs such as printing, security, postage, clearing and handling costs but also brings other non-financial costs to the users / society such as growth of a shadow economy, environmental damage, etc.

Regardless of the customer's own preference, payment will be made using a particular mode depending on the seller acceptance. Hence, a 'managed' decline of cheques could nudge the payments choice into electronic mode. The receipt for the fees paid issued by academic institutions or DD is a testimony of this fact. Thus, even these factors are well-appreciated, it has not been possible to push-the-envelope insofar as ensuring that cheque usage is seriously discouraged. It is perhaps appropriate to do so now that alternate means of payments in the form of easy, accessible, low-cost and efficient electronic systems are available.

Developments in Electronic Payments

Today, we have many options of electronic payments which can easily be adopted by the cheque using public - both institutional and individual users. These include systems such as:

Electronic Clearing Service - While the ECS is generally operated at local levels, the National ECS (NECS) system, operated from a central location at Mumbai, It is a pan-India system facilitating crediting of accounts of beneficiaries across bank branches. It leverages on Core Banking Solutions (CBS) of member banks. The Regional ECS (RECS) covers all CBS-enabled bank branches within a state or a group of states, thus facilitating state-wide payments / receipts to be processed at a centralised location.

National Electronic Funds Transfer (NEFT) system facilitates near-real-time funds transfer facility with its twelve batch settlements at hourly intervals, this system can be best used for domestic fund transfer requirements. Some salient features of the system include - acceptance of cash for originating transactions by walk-in customers, positive confirmation to the sender regarding successful credit of funds to the beneficiary account, provision for penal interest for delayed credit to beneficiary account or delayed return of funds to originator, no minimum or maximum amount limitations, facilitating outward transfers to Nepal to enable migrants from that country to remit funds to their families using the formal banking channel, etc.

Real Time Gross Settlement (RTGS) system facilitates both inter-bank and customer transactions with transfer of money taking place from one bank to another on a "real time" and on "gross" basis. Settlement in "real time" means payment transaction is not subjected to any waiting period. "Gross settlement" means the transaction is settled on one to one basis without bunching or netting with any other transaction. All inter-bank payments and customer transactions above Rs.2 lakh can be processed through this system.

Inter-bank Mobile Payments (IMPS) operated by NPCI facilitates inter-bank transfer of funds through mobile phones. This leverages on the high penetration rate of mobile phones and is built around the convenience and ease of use among mobile phone users. Further, the system also provides the convenience of using the IMPS for internet-based on-line transactions.

National Automated Clearing House (NACH) operated by NPCI is similar to the ECS payment service enabling pan-India processing of bulk payments and receipts. The system has just been operationalized towards the end of December 2012.

The Aadhaar Bridge Payment Systems (ABPS) has been put in place by NPCI as a payment bridge in order to facilitate direct credit of government benefit payments to beneficiary accounts based on the Aadhaar number, Amount and Transaction reference number. Account number and Aadhaar number mapping has been done by each beneficiary bank and uploaded to the NPCI central system. Thereafter, through Aadhaar Enabled Payment System (AEPS), the funds are withdrawn by the intended beneficiary at Business Correspondent (BC) locations by providing Aadhaar number and validation of biometric identification.

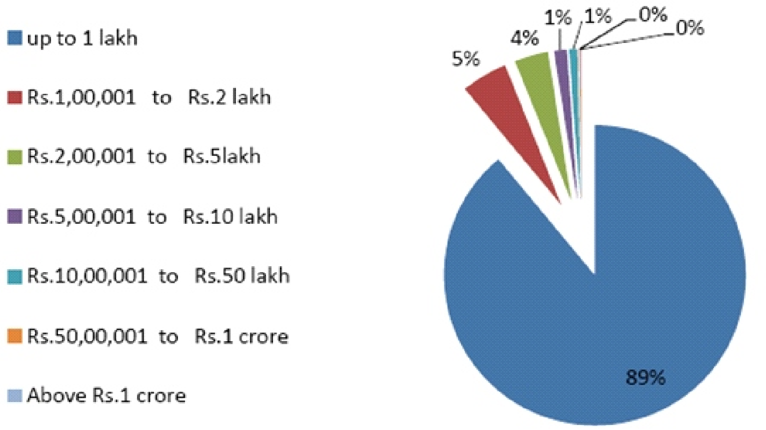
All efforts are being made by RBI and the banks to create awareness about the safety, security and ease of operations of electronic modes, using various platforms including customer interactions etc. Similarly, in recent times, the charges structure for most of these products has been rationalised even as the necessary payments infrastructure in the eco-system is being strengthened.

Multi-pronged Approach for Cheque Disincetivisation – suggestion to discourage cheque usage

Given the reasons for continued existence of cheques as a payment means, positive reinforcements for electronic payments alone will not lead to reduction in cheque, but it has to be reinforced unequivocally through certain measures which will disincentive the usage of cheques quite forcefully. Based on the inputs received, the following strategies can be considered for reducing cheque usage but also envisages paving the way for 'directing' the users towards adoption of electronic payment services.

- Education and Awareness of alternate payment means would go a long way in ensuring the success of this plan. The ongoing financial literacy efforts through Electronic Banking Awareness and Training (e-BAAT) would play a very significant role in this context. Broadly the segments may be classified into individual users, institutional users and Government departments so as to encompass all the categories involved in the process of payments.

Chart-3: Cheque Volume - As per value-band of instruments



Source: *Data from MICR CPCs*

- Prescription of any cut-off amount limit on issuance of cheques would have a positive impact depending upon the general values / amounts for which cheques are usually written in the country. An analysis of the volume of cheques cleared through the MICR Cheque Processing Centers (CPCs) across the country during the first half year of the financial year 2012-2013 reveals that around 89 per cent of the cheques cleared in these centers were below Rs.1 lakh under various categories. Mandating an upper threshold limit will have to be decided taking into the cheque usage pattern by various segments discussed above, so that small users are not inconvenienced even as the objective is largely met.

- Set limits or levy charges on issue of cheque books to account holders. Prescribing higher charges on the usage of cheques while issuing beyond a limit may act as a deterrent in using cheques. Also levy of charges on cheque usage- by both issuer and the beneficiary when cheques are issued.
- Avoid slippage to cash transactions is the real apprehension that is often expressed when any plan to discourage use of cheques is discussed. Given the fact that the large volume of cheques issued in the country are of relatively low value, which combined with the accessibility of ATMs (at least in major cities and towns) gives rise to the real worry that if cheque usage is actively discouraged, it would have a negative impact.

A sample survey was conducted with banks on cost of cash handling including idle cash, maintenance of currency chests, cash movement like transport, security, insurance, etc. along with the cost of dispensing cash at ATMs. The feedback received was stunning, It revealed that - cost of handling cash is Rs.1.95/ Rs.1000/- plus insurance whereas in ATM it is approximately Rs.17 per transaction. The cost of holding idle cash is 9 per cent. It excludes the cost of manual operations handled by their own staff, which could be construed as the 'social cost' of cash transactions to the economy as a whole. Cash transactions in bank accounts need to be discouraged / charged heavily. RBI mandated charges in such cases to avoid resultant shifting of CUSTOMERS from one bank to another.

There are some issues which need to be addressed - both regarding disincentivising cheque usage as well as incentivising greater adoption electronic payment products and services as highlighted below:

- A sunset clause for disincentivising the cheque users and migrate towards electronic payment methods be fixed, keeping in mind the diversity of users and the disparity in availability and accessibility to alternate payment services.

- Standardize the practices and procedures in electronic payment services to meet the technological requirements and also the operational expectations of the users who migrate from cheque usage to these systems.
- The NEFT system provides positive confirmation to the sender which enables him / her to be aware of the time the funds were credited to the beneficiary account. Incorporation of such payment details in bank account statements / pass books would also facilitate record-keeping requirements of customers. Similarly some sort of functionality (e-invoicing for instance) is to be built within the institutions such as companies, schools and educational institutions, etc., to receive payment and provide an immediate documentary evidence to the payer.
- Public awareness regarding the Protection for bouncing of 'electronic payments'. Section 25 of the Payment and Settlement Systems Act, 2007 accords the same rights and remedies to the payee (beneficiary) against dishonour of electronic funds transfer instructions for insufficiency of funds in the account of the payer (remitter), as are available to the payee under section 138 of the Negotiable Instruments Act, 1881. Ensure that users of these systems are aware of their legal responsibilities and rights.
- Widespread accessibility to electronic payments - A high growth in electronic payments can be witnessed when the network effect is strong and there is no skewness in demand and supply of such services. Greater awareness also to be created about the availability of such payment options.

- Customer liability – Clarity regarding the responsibilities and obligations of customers as well as banks and service providers is very crucial in ensuring greater adoption of electronic payments.

Individuals as Cheque Users

- Free cheque books may be kept to a minimum number on a per annum basis.
- PDCs should be completely stopped and repayments should be only through electronic payments. Existing PDCs be converted to electronic payment mandates within a prescribed timeline.
- Credit card dues should be paid electronically.
- Levying a charge for those investors who have not opted for receiving dividend / interest directly into their bank accounts.
- In order to avoid increased dependence or slippage to cash-based transactions, high (both in amount and frequency) cash withdrawals and deposits of cash by individuals may also be charged.
- Discourage cheque collection boxes at public places - have it only at bank branches. This will reduce the convenience of using cheques by individuals.

Institutions as Cheque Users

Corporates and institutional customers are the largest users of cheques across all value bands accounting for 54 per cent – 64 per cent of cheques processed. Hence, this segment is to be targeted for moving towards electronic payments. The following actions are proposed for the purpose and also to ensure that there is no slippage to cash:

- Access to cheque books be made costlier. The charges levied for cheque books may be increased substantially. Also levy charges for cheques issued at a higher rate than the corresponding electronic charges.

- Interest warrants and dividend warrants are to be issued in electronic forms only. No inconvenience charges to be levied while accepting electronic payments.
- Similarly, cash deposits in current accounts need to be discouraged actively and higher charges may be levied on them.

Government departments / agencies as Cheque Users

Given the sizeable nature of Government transactions, they play a catalyst role in driving the payments in the desired direction. If the government departments / agencies including public sector companies / utilities migrate from cheque-based transactions to electronic payments, it would naturally drive many others to adopt electronic payment services. Similarly, some of the practices and procedures followed by government departments may also influence the choice of payment mode for those dealing with government departments.

Conclusion

The task of designing developing and operationalising a modern, integrated, robust payment and settlement system for the country, is a gigantic one. The strategy for achieving this is by breaking the various objectives into many components, with clear targets to be achieved at every stage whereby it becomes more manageable to accomplish each objective in its entirety. The role and functions of each participant in the payment and settlement systems of the country are also vital and it is only by the concerted efforts of all concerned that the vision would materialise into reality and the mission of LESS CASH / LESS PAPER SOCIETY may be accomplished.

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Sustainable Community-based Enterprise: A Study of Udupi Jasmine

*** Mr. Robin M. Shinde**
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Abstract

In the demanding and progressive world, progress takes shape thru application of new ideas to pestering socio-economic problems. Local community development which seeks to empower individuals and groups of people by providing them with the skills they need to effect change in their own communities. An enterprising characteristic among a local community of a particular place taking lead in resolving socio-economic issues can take shape of Community Entrepreneurship leading to the formation of Community-based Enterprise (CBE). In undertakings, individuals who are already members of some geographical community, act collectively to initiate and operate an enterprise in pursuit of their common purposes. Community members constitute the body of decision-making authority and have direct control of the enterprise's operations in these enterprises. This paper discusses the CBE of Udupi jasmine in Karnataka that has helped in the development of this area through community initiative. The paper begins with some discussion on the concept of development followed by detailed narration on the CBE model. In the later part, it speaks about the proposed CBE model vis-à-vis jasmine economy of Udupi. Finally some insights into the whole concept of CBE in the regional context is made to draw conclusions.

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Key words : *CBE, Physical and Socio Economic Attributes*

Introduction

In the common parlance, development implies economic progress. Scholars claim that it involves change, improvement and vitality, a directed attempt to improve participation, flexibility, equity, attitudes, the function of institutions and the quality of life. 'Development' is a process that has space for new options, diversification, thinking about apparent issues differently and anticipating change (Christenson et.al., 1989). It is the creation of wealth – wealth meaning the things people value, not just dollars (Shaffer, 1989). Being a complex issue, the term development has many different and sometimes contentious definitions. In the context of community, it leads to a net addition to community assets, avoiding the 'zero sum' situation where a job created 'here', is a job lost 'there'. Development (Opschoor, 1998) postulate of India or elsewhere are mainly intended to:

- Ensure adequate family income to provide subsistence essentials
- Create sufficient employment to allow for the continued redistribution of income and opportunity
- Increase access to education and improve literacy rates
- Enhance the ability of the population in general to participate in government
- Promote national independence
- Satisfy the needs for every individual to become self-reliant and be a part of the development process.
- Freedom to the individual to start one's own enterprise

The United Nations Development Programme (UNDP) uses a more detailed definition. It says, the development is to lead long and healthy lives, to be knowledgeable, to have access to the resources needed for a decent standard of living and to be able to participate in the life of the community (http://www.volunteeringoptions.org). Moreover, it linked people perspective of development that stresses the liberation of people from obstacles that affect lives. If community members can learn to communicate across class, ethnic, and racial lines, and to set up organizations, systems, and policies to take advantage of their resources and address their problems, they can make life better for everyone. Hence, this takes form of community development which seeks to empower individuals and groups of people by providing them with the skills they need to effect change in their own communities (http://en.wikipedia.org/wiki/Community_development). Many a times, the clamoring for lasting solutions to pestering socio-economic problems can take shape of community-based enterprises (CBE). They are undertakings in which individuals who are the members of given geographical community, act collectively to initiate and operate an enterprise in pursuit of their common purpose. Community members constitute the body with decision-making authority and have direct control of enterprise's operations.

In the Indian sub-continent different regions are endowed with unique resources that assisted people to localize skill-sets to develop 'place specific' products, and indigenous knowledge that can pass from one generation to next (Putting it in World Trade Organisation terminology as Geographical Indicators). They have survived for generations and even today they are providing gainful employment to the community involved. CBE Model not called by that name though it is prevalent for many decades. May it be Kashmir Shawl or Kanjeevaram Sarees or Assam Tea and our own backyard Udupi Jasmine or Mattu Gulla each one is having a special place in the mind space of Indians. They are shining examples of CBE survived for decades. No attempt has been made to understand these under the lens of CBE. This paper tries to propose a model to understand them in the context of CBE. Furthermore this article tries to answer the following questions:

1. Whether community-based enterprises can ameliorate socio-economic problems like poverty alleviation, rural development and inclusive growth?
2. Can CBE work better than individual-lead enterprises in bestowing benefits to the society?
3. What are the roles played by social animators or societal leaders in development of community entrepreneurship?
4. What forces certain segment of communities but not all get encouraged in being part of the CBE?
5. What is the special bondage that holds whole community and also that provides emotional ownership of CBE?
6. Can successful models of CBE be up scaled elsewhere in the country or any part of the globe?

An attempt has been made in this paper to propose a Sustainable Community-Based Enterprise model and validate that model in the context of Udupi Jasmine. In Udupi District of Karnataka jasmine growing and marketing is successful in social and economic development that proved robust for over seventy years. The paper begins with some discussion on the concept of development followed by detailed narration on the CBE model. In the later part, it speaks about CBE model vis-à-vis jasmine economy of Udupi.

Sustainable Community-Based Enterprise (CBE) Model: An Overview

Communities across different places around the globe are in sense of tension and turbulence in maintenance of their survival needs. Globalised world has challenged them with problems of unemployment, lack of industrialization and low sources of income.

They individually look out for options by finding employment or getting self-employed in some vocation for their family and self-sustenance. But on wider dimension of this sustainability issue, people coming together collectively to resolve it can give rise to innovation in solution. Quite often that may take the form of community-based enterprises which is the core of the present paper.

In their seminal article Peredo and Chrisman (2006) have proposed that CBE is characterized by people movement wherein a community collectively takes charge for the establishment and progression of an entrepreneurial venture. They have argued that successful CBE depict certain characteristics. They suggested that the emergence of CBE is usually characterized by the following ten items:

a) CBE appears as a response to a social/economic stress faced by the community.
b) It is a product of incremental learning there are no magic answers and careful planning and involving of all constituents is preliminary to taking action.
c) There are repeated economic transactions between players in the community.
d) Social capital is integral to the formation of a CBE.
e) It is based on available local skills.
f) It has multiplicity of goals that is the need to achieve social, economic, environmental, and cultural goals simultaneously.
g) The project is managed and operated by local people rather than external experts.
h) The community acts as an entrepreneur when its members, acting as owners, managers, and employees, collaboratively create or identify a market opportunity and organize themselves in order to respond to it.
i) The size of the community should be sufficient to generate a stock of social resources that is optimal to allow social

organization to become an economic organization.

j) CBEs are owned, managed, and governed by the people, rather than by government or some smaller group of individuals on behalf of the people.

Above characteristics can be re-organised into specificities of: one, the people and second, the place (Figure 1).

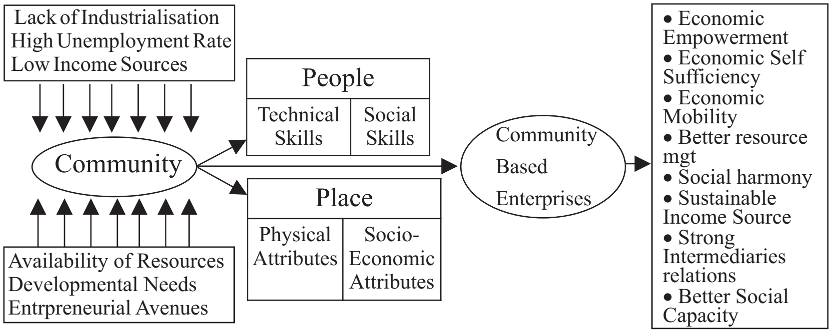


Figure 1: Sustainable Community-Based Enterprise Model

The emergence and sustenance of CBE model rests on two basic aspects. Certainly people possess some technical skills that have been passed to them their elders and the social skills which arise from the continual interaction between individuals and the resultant networking of people. Place in this context has certain attributes that may be termed as physical resources endowed and socio-economic specificities.

2.1 People

- In all forms of development, people' factor is an important criteria in both initiating the process of development and reaping the benefits of development. CBE sustainability can be linked to the people specificities which are peculiar to the skills that are usually developed when one learns to do a given task competently. By this it means one can do it to the best their his/her ability, in the most appropriate manner. Anyone can develop skills if he/she is willing to put in the necessary effort. In CBE Model it is important that people possess develop variety of skills that can enhance their life and change it for the better. As suggested by Peredo and Chrisman (2006) local people's individual skills and their capacity to manage it on their own is important. People need to possess the know-how understanding for the conduct of their businesses and also they need to learn the importance of social interactions that also play an important role in sustenance of their entrepreneurial initiative. In this sense there are two main planks for getting people specificity in the CBE Model which includes technical skills and social skill

- **Technical Skills:** Technical skills that are developed in CBEs, enable them to be able to understand, communicate with, and lead the technicalities of the entrepreneurial initiative for their growth, expansion and long term existence. Further they really need to be able to understand the technical language spoken by the CBE members and have a very good general understanding of what is faced by them and also to be able to effectively tackle issues concerning them. This does not mean that they need technical skills to better their entrepreneurial initiative, but the level of technical understanding is important to provide the best results for other members in the community. For a successful CBE as suggested Peredo and Chrisman (2006), people need to have many skills that enable them to conceive, develop, implement and grow new ideas, products, services and business which are most critical skills that they must develop and possess.
- **Social Skills:** Social skill is any skill facilitating interaction and communication with others wherein social rules and relations are created, communicated, and changed in verbal and non-verbal ways. In CBE, social skills are how people

relate to one another for the continuity of their entrepreneurial initiative which would help in leading, managing, relating culturally and relating to others communicating.

2.2 Place

Place specificities could relate to a town, a city neighborhood, a rural area, etc. In the context of CBE model suggested, the place specificities are essentially the features that are uniquely available to support the entrepreneurial initiative. Any locality or place with unique features that would differently favour the growth of their entrepreneurial ventures in different places. Further place specificities can be characterized by two attributes namely: physical and socio-economic attributes.

- **Physical Attributes:** Entrepreneurial ventures are mostly characterized by the availability physical resources that are uniquely present in an area. It could include altitude, temperature, rainfall pattern, nature of the soil, etc. Physical characteristics describe the natural environment of the place and it could be detailed as below:
    1. physical features - are landforms and bodies of water
    2. weather - is how hot or cold and how wet or dry a place is
    3. climate - is the kind of weather a place has over a long period time
    4. soil - is the top layer of the Earth in which plants can grow
    5. minerals - natural substances, such as coal or gold, which are found in rock and in the ground
    6. vegetation - is plant life and there are different types of vegetation vary from place to place, such as, forest, grassland, tundra and desert
    7. animal life - includes all the large and small animals that live on Earth.

An assessment with regard to the physical attributes is important as it helps to have better understanding of the resources at stake to develop and nurture their entrepreneurial initiative. Further physical attributes also can be related to the logistics and transportation modes that are peculiarly available to a place. Also the network of intermediaries to reach the products and services for final consumption points are also essential.

- **Socio-Economic Attributes:** Socio-Economics is the social science that studies how economic activity affects social processes. In general it analyzes how societies progress, stagnate, or regress because of their local or regional economy, or the global economy. Socio-economic development is measured with indicators, such as GDP, life expectancy, literacy and levels of employment. Socio-economic attributes in the context of CBE model can be related to household income, educational attainment, occupation, neighborhood and association memberships. Also it can contextualized by changes in less-tangible factors that are considered, such as personal dignity, freedom of association, personal safety and freedom from fear of physical harm, and the extent of participation in civil society.

3. Udupi Jasmine: A Case of Sustainable Community Based Enterprise (CBE)

The grassroots initiative in Udupi Jasmine is based on the CBE model among the producers that is the jasmine growers at the household levels; the buyers that is agents and traders at the village/region level; and wholesalers at the city and international level. It is even more fascinating as participation originally was religion-based with the producers and traders being Catholics and users being Hindus. For seventy years, the production and selling of jasmine flowers has helped alleviate the whole region (about six villages and about 6,000 households) from extreme poverty and it has proved itself robust to recessions, political changes and technical advances. Additionally, a strong network of trust was established among the producers, agents and traders which underwrites the whole system and can be the poster child for social capital and CBE. Social capital, which is resource endowed by Udupi jasmine economy in rural coastal Karnataka, is the notion of people in the same area who are involved in repeated face-to-face interactions and where reputation is essential for continued participation (Coleman, 1990 Fukuyama, 1996). In such places, people develop high-level trust in their peers than those in positions of power. As Putnam (1993, 2000) has shown, geographical areas with higher social capital perform economically better. Peredo and Chrisman (2006) address the solidarity and willingness for collective action that is linked to social capital. Woolcock and Narayan (2000) argued that different combinations of bonding (intra-community ties) and bridging (extra-community networks) social capital can explain the success or failure of development. They argued that “the positive aspects of 'bonding' social capital in poor communities can be harnessed and its integrity retained (and, if necessary, its negative aspects dissipated), while simultaneously helping the poor gain access to formal institutions and a more diverse stock of “bridging social capital” (Woolcock & Narayan, 2000).

3.1 People

The growers maintain the jasmine bush at a height of about two to three feet and at about one to two feet perimeter. Every morning except during the monsoon season, the lower branches are cautiously lifted and water is sprayed by hand close to the trunk to the bush. Then each branch is inspected for tightly closed petals of budding jasmine flowers of pure white colour which are plucked carefully. Each grower may pluck 200 to 700 such buds from each bush. The buds stay fresh for about three days when preserved in cool conditions. By 10 a.m. the chains of jasmine are tightly wrapped in banana leaves, and the chit of paper with the households name recording the number of buds (or length of chains) is attached to the package. This early end of the workday allows many growers to hold other jobs as the working day in India often starts after 10am.

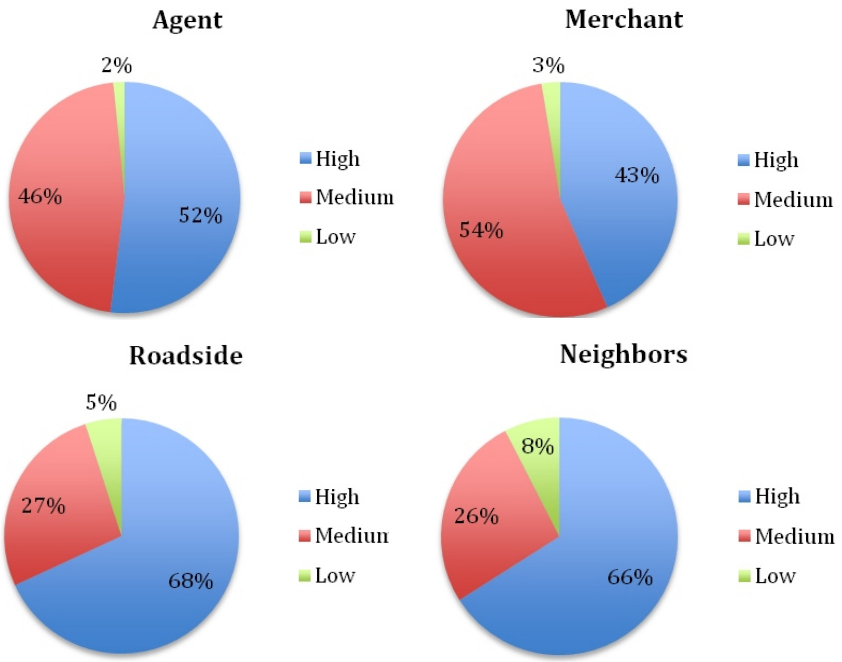
The grower households are each connected to one of the agents of flower merchants who hire young boys from the villages to help them collect the flower buds packages left by the growers along the roadside at marked delivery points. The agents having gathered the bundles untie and re-bundle them into marketable chains of 800 buds. The agent keeps track of the buds received from each grower and ensures that correct payments are made to the households each Sunday. What is interesting to note is that when the agents untie the bundles they rarely check the number of flowers against the tag attached to the bundles. The chits are put aside in a desk drawer as the bundles are opened and retied, and the accounting is only done after the flowers are delivered to the traders. Time is of the essence in getting the flowers to the traders.

- **Technical Skills:** Jasmine buds are then tied together with thin strings made from leaves from the banana tree that is ubiquitous in this part of the country. The use of banana strings is important as cotton or nylon strings are not permissible in Hindu temples where the flowers are most often used. Therefore, the household prepares bundles of strings from the banana trees and keeps them ready for the morning. The tying of the jasmine buds is done to form a row, with 800 buds folded about 6 inches (18cm) of a jasmine chain each one is called 'chendu' (four chendu makes one 'atte' of 3200 flowers. This is yet another very labour intensive part of the production process done at the household level before getting the jasmine flowers to the market.

- **Social Skills:** Explanation in the previous paras gives the clear idea about main stakeholders involved: the jasmine growers, jasmine agents, flower-merchants. Social interaction among the stakeholders and protection of their interest is vital for continual success of CBE. As in the case of Udupi Jasmine a fair price determination for the growers is a key point in the sustainability of such a local market and the process is transparent in nature and widely communicated to all through various forms of communication channels. Furthermore, if there is a breach of confidence at the grower level (e.g. by cheating on the amount or quality of buds reported and delivered), no agent would be willing to collect the growers' flower buds, nor trader willing to buy this grower's production. Agents do not usurp growers from other agents, and similarly neither do traders usurp agents from other traders as the transactions are all transparent in the community. The traders having long standing wholesale buyer contacts also have no incentive to change their relationships at least on account of price which remains the same across the board. Hence effective social interactions between the stakeholders has created an environment of trust and confidence with each other that CBE of Udupi Jasmine has lead to its continuity over past few decades (Handy et.al, 2011). To assess whether or not trust is present in the community, we asked growers directly what level of trust they have with respect to other members of the jasmine CBE. The results are compelling and highlight ultimate success of the CBE, at least with respect to trust. The following high levels of trust were recorded: 92 per cent of growers trust their neighbors, the people with whom they interact the most; 98% of growers trust their agents; and 97 per cent of growers trust their merchants. (See Figure 2)

Figure 2: Level of Trust

What level of trust do you have with respect to the following:



[1] *Jasminum sambac*: Cultivation of this variety of jasmine, particularly prized for its delicate scent, started in Shankarapura in Udupi district about 75 years ago. It requires the red soil typical in this region and blooms year round. It was recently registered under Intellectual Property Right (IPR).

- **Place**

Jasmine is widely cultivated for its flowers, which are especially important in India for a variety of uses from the production of perfumes, incense and to use as decorations. A particular type of jasmine, the *Shankarpura mallige*[1] is especially prized in use by Hindus for weddings, holy days, and festivals. It is used as offerings in temples, in garlands for holy statues, as decoration-cum-deodorant in women's plait, and as garlands during wedding and social ceremonies. The jasmine is grown primarily in the *Shankarpura Region*[2] in Udupi district of coastal Karnataka. The typical nature of the soil in this region is apt for the growing the jasmine buds and the south-west monsoon pattern ideally suits the Jasmine flowers. Further the Government of India has given the official Geographical Indicator (GI) status for the variety of Jasmine grown in this region.

- **Physical Attributes:** During pre-independence days in India, the most fertile lands for agricultural production were held by the Hindus who formed the majority in this part of India. In the 1930s, the Catholic families who represented about 20-30 per cent of the population in the Shankarpura region owned very small pieces of infertile land and had trouble making living from agriculture. A local Catholic priest, in the 1930s cajoled his parishioners to turn their attention towards growing the jasmine since the nature of the soil and the climatic conditions perfectly suited for growing Jasmine flowers. Further, the flower was particularly prized in the local market and would be a good means for earning

[2]The mallige jasmine's growing zone - the Shankarpura region - includes the geographical areas of the following villages - Shirva, Innenje, Padu-and-Moodubelle, Kutyaar, Kalathur, Belman, Kinnigoli. The laterite soil of the region and monsoon rains provide the perfect environment for the crop.

livelihood. The success of the first few parishioners was contagious, and before long all his parishioners were growing the jasmine whereby each family grew anywhere from 5-50 bushes in the small plots surrounding their homes and on public lands adjacent to their homes.

Figure 3: Population Profile – Udupi district Jasmine Zone

Sl No	Name of Village	Total no. of households	Total population			Work participation rate	
			Total	Male	Female	Male	Female
1	Marne	238	1,169	557	612	56.2%	26.5%
2	Kurkalu	1,045	4,744	2,135	2,609	56.7%	29.4%
3	Belle	1,184	5,324	2,441	2,883	57.0%	46.9%
4	Kattingeri	527	2,332	1,033	1,299	57.5%	40.5%
5	Shirva	2,798	13,281	6,229	7,053	52.3%	32.6%
6	Heroor	279	1,248	554	694	60.3%	56.9%
7	Paadoor	376	1,858	835	1,023	57.8%	46.0%
8	Majoor	336	1,822	856	966	57.4%	47.6%
9	Innenje	610	2,898	1,278	1,620	54.1%	37.6%
10	Pangala	438	1,948	903	1,045	60.2%	50.5%
11	Kalthur	640	3,058	1,343	1,715	50.5%	33.1%
12	Kuthyar	575	2,656	1,175	1,481	54.2%	37.4%
13	Pilar	824	3,391	1,455	1,936	50.8%	32.6%
14	Yellur	1,229	5,844	2,604	3,240	55.3%	41.7%
TOTAL		11,099	51,573	23,398	28,176		
AVERAGE		793	3,684	1,671	2,013	55.7%	39.9%

Source: *Directorate of Census Operations, Karnataka*

- **Socio-Economic Attributes**

  The convincing strength of the system is that for nearly 70 years jasmine buds are sold on a daily basis. The people (growers, agents and traders) who are engaged in the process demonstrate high level of trust both at the individual level as well as at the community level. The margin of profit for the traders of this 'upstream' part of the value chain (Porter, 1985) is publicly known and is a low fixed per centage. The social capital in these villages ensures that there is rarely any cheating at any point in the system. As discussed earlier the economic gains from cheating are small and the social costs are high. Furthermore, as the traders have long standing relations with their buyers (wholesalers), and buyers will not take products from competing traders, for the word gets around fast in this relatively small tightly knit group of six traders. All the stakeholders including growers, agents and traders in the Udupi Jasmine are economically empowered with trusted intermediary relationships and best utilization of the resources at hand. The Udupi Jasmine CBE has almost zero discrimination status in both social and economical attributes towards all its stakeholders (socio-economic profile of Udupi region described in Figure 3).

Conclusion

While the case of the Udupi jasmine of coastal Karnataka supports majorily principles elucidated by Peredo and Chrisman (2006). Also the proposed sustainable CBE model, in its adaptation to the Udupi Jasmine in Karnataka finds appropriately linked with the people and place attributes. The sole purpose for development among the community based enterprise in this region is economic empowerment and poverty alleviation (Narayan, 2002).

In the case of the Udupi jasmine, all leaders are local and all changes take place incrementally and indigenously. In this sense, there is no top-down external agent, on behalf of a NGO or government or World Bank, often a prescription for failure (Scott, 1998) but it is a smaller group who manage on behalf of the people (Peredo & Chrisman, 2006). Furthermore, as Mansuri and Rao (2004) find in their review of the literature on community based development that there is a distinction between potentially benevolent forms of elite domination and more pernicious types of capture.

Therefore, while local villagers use their own (as well as public) land and cultivate their own bushes they are not owners of the programme nor are they organized, and really managed by anyone. Within the CBE there are many small mechanisms that give power to the growers (e.g. the trust based handling of the receipts) to prevent them to become 'exploited' by the owners (traders). Finally, there is absolutely no role for the government in the program but purely community driven initiative been in existence for over seven decade.

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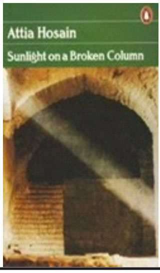

A Relic a Lost World

A review on...

Sunlight on a Broken Column;
Author: Attia Hosain,
Publishers: Penguin Books,
Price: Rs 280.

*** Dr. Manjula**

'Old order changeth, yielding place to new' is a popular saying of eternal relevance. The paradox that change is the only constant factor is true, however, the pace of change accelerates at times and decelerates at other times. The early twentieth century was one such periods of swift and rapid transformations, especially in the socio-political structures of the world. What was of a deeper and a more far reaching consequence was the change in human relationships which had a significant impact on the construction of identities and the consolidation of communities and nations in the post colonial world. Attia Hosain's Sunlight on a Broken Column recaptures the life and experiences of a transformational phase in the history of our nation, depicting the trauma that the then generation of men and women had undergone as helpless witnesses of an onslaught on human relationships. Her subject is the India during the fag end of colonial supremacy, the India that woke up to the reality that the impact of the damages caused by centuries of foreign domination was too severe to be set right by a mere withdrawal of the imperial masters.

The ruins of the ancient monuments and structures that speckle a modern city of massive and sprawling concrete constructions make a discerning observer curious to know the past they represent. The book under review is one such monuments, in which the nostalgic remembrances of the author instill in the reader an irresistible desire

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to retrace the steps and retrieve the past. Sunlight on a Broken Column truthfully portrays a segment -1930s to 1940s - of the history of north India, more precisely that of Lucknow, a city known for its rich Islamic culture. It recreates the pre-Partition Indian sub continent bringing back to life the glory of that ancient world and the enchanting life of the men and women who lived through the period. The novel thus gains importance not only for its literary beauty but also historical significance.

History and fiction, both being constructs, are so similar that at times the line of demarcation between the two fades, making them seem to be the same. In the words of Linda Hutcheon, "The composition of the world 'history' itself contains the word 'story'" (285-286). Reflecting on the closeness of the two disciplines, she further observes, "…literature and history were considered branches of the same tree of learning, a tree for interpreting experience, for the purpose of guiding and elevating man" (105). The two disciplines are complementary to each other with history throwing light on fiction, and fiction contributing to a better and fuller understanding of history. One has to pay heed to the tales told by the fictional characters to read what is left untold in the seemingly objective and factual accounts of history.

Attia Hosain's father Shahid Hosain Kidwari belonged to the Taluqdar family - feudal landholders - of Oudh, a state in north India known during the time of the British as United Provinces. He was educated at Christ College, Cambridge and the Middle Temple and her mother, Nisar Fatima who hailed from a distinguished intellectual, traditional Muslim family was the founder of an institute for women's education and welfare. Hosain attended the Isabella Thoburn College at the University of Lucknow. Her traditional upbringing also helped her to gain mastery over Urdu and Persian. In 1947, to avoid relocating to Pakistan, Hosain left for Britain with her family, where she was well known as a writer, feminist and broadcaster. A seamless blending of the traditional and the modern in Attia Hosain is at the core of all her literary compositions.

"Sunlight on a Broken Column is one of the few deeply sensitive novels in the Indian English writing of the last generation, a poignant, tragic narrative full of poetry of remembrance with an undercurrent of stoic calm" says, Mulk Raj Anand in his introduction to the Arnold Heinemann edition of the novel. The twentieth century, especially its first half, was a period of political, social and cultural transformation which had accelerated and turned into a radical force in the 1930s and 1940s. The change that came over the concept of nationhood was a world-wide phenomenon and in our country the force that accelerated the transfiguration of nationhood was the Colonial experience, especially the divisive policy of the British. Cultural heterogeneity was so pronounced in the pre-British India that the similarity of the cultural practices of every region gave its people a sense of oneness. This feeling of oneness that prevailed among the people of every region of the vast Indian subcontinent, irrespective of their religious faith and communal affinities was what was questioned by the British.

In the contemporary world there is no nation which has such a varied cultural heterogeneity as India. It was this astonishing diversity of India that made the British exclaim: "…there is not, and never was an India, or even a country of India, possessing according to European ideas any sort of unity… no Indian nation, no 'people of India' of which we hear so much" (Chadda, 26). The pre-British India was characterized by tolerance and peace and the first notes of discord came to be heard with the consolidation of the administrative strategies of the British. In consequence of this, the religious identities became more and more pronounced. The India that was projected by the British historiographers of the period was as the

'Other' of Europe and the British novelists like Rudyard Kipling and E M Foster complemented this image in the literary works.

In these circumstances, establishing a national identity was an inevitable need for the Indian national leaders. The programmes targeted towards the founding of a Hindu national identity initiated in this context in the last decades of the nineteenth century consolidated the Hindu nationalism as propagated by the Right wing. An attempt to project the political legacy of the Muslims was a natural reaction to this.

In the works of the Indian Muslim writers of the early twentieth century there is an effort to portray the collective consciousness of the Muslim community of the period. Sunlight on a Broken Column expresses a nostalgic yearning to do away with all the divisive forces which annihilated the peace and quietude of the life of the nation and records the political events that moulded and transformed the concept of nationhood. It is remarkable for its objectivity and authenticity in the presentation of the national events of the pre-Partition era. The historic transition that came over the common man's idea of nationhood and his religious and regional affinities and the choices that he made, or rather, was compelled to make are presented by the author.

Attia Hosain sketches a realistic picture of the pre-Partition India in Sunlight on a Broken Column by juxtaposing the views held by different members of the Taluqdar family around whom the story is woven. This novel that subverts the patriarchal construct that politics is not the prerogative of women also presents a realistic picture of the India during the years that preceded and followed Partition. The central issue of the novel is Laila's self realization. The story of her self-realization is also the story of the Nation that struggles to come to terms with the communal hatred unleashed in the closing years of the colonial rule.

The death of Baba Jan, the patriarchal head of the "Ashiana" household with which the novel begins also indicates the disappearance of a way of life. Uncle Hamid belongs to the generation of the period of transition, the agent of fervent nationalism. He takes a pro-British stand that was characteristic of the Taluqdars and other landed gentry who had enjoyed certain privileges from them.

Uncle Hamid's sons Kamal and Saleem are foils to each other; Kamal advocates the secular nationalism of the Congress and Saleem the fanatical stand taken by the Muslim League in the 1940s. The latter is critical of the anti-Muslim stand of the Congress when he says, "I believe that the Congress has a strong anti-Muslim element in it against which the Muslims must organize. The danger is great because it is hidden like an iceberg" (Hosain 233).

Asad and Kamal are two characters through whom Hosain portrays the sober stand taken by the nationalist Muslims. Yet she is careful to draw a line of demarcation between the two. Asad is a Gandhian who accepts non-violence "believing that bitterness and retaliation could only breed violence" (315). Kamal strongly adheres to the secular nationalist views. His faith in nationalism withstands even the horror and the pain of Partition. His words to Saleem are expressive of this faith, "But I believe in my country. I have to fight for what I believe in" (287). Laila's political sympathies are with Asad and Kamal, though her conventional upbringing does not permit her to be so demonstrative of her views.

Hosain's "Ashiana" is a microcosm of the India that was in a state of turmoil during the years that preceded the Partition. The Muslim perspective of the pre-Partition political crisis is the chief thematic concern of the author; however her success is that she has impartially presented the views held by different sections of Indian Muslims accurately.

The scattered ruins of old monuments in the modernized metropolitan cities of India shake us from the illusion that life in India is what we see in the massive malls and multiplexes. So also immortal literary creations which realistically depict the life as lived by the people of a lost world are reminders of a rich past. Attia Hosain's Sunlight on a Broken Column falls under the category of such immortal creations. The glimpses of that old world of peace and harmony, in which communities and cultures were assigned their own spaces, leave the reader with a nostalgic desire to bring back those days of yore. At a time when racial, religious, regional and cultural differences set one against the other, and communities in conflict with one another emphasize their differences with a sense of rivalry, literary works like Sunlight on a Broken Column are relics that make one look back upon those days of tolerance, peace and harmony, when differences were celebrated, allowing cultures and traditions to mix and merge leading to new and diverse cultural formations.

"To get what we've never had, we must do what we've never done"

- Anonymous

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"Change is the watch word of Progression"

- Anonymous