

# ARTHA BEEKSHAN

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Contents		Pages
Indian Classical Thoughts Vs Modern Thoughts On Economics And Development	V.R.Panchamukhi	3
Inequality in Child Malnutrition	Smritikana Ghosh	13
Sustainability Of Indian Agriculture Under The New Economic Policy Regime:A Case Study Of West Bengal	Sumana Mukherjee	25
Agricultural Trade And Sustainable Rural Development In India	Piyali Chatterjee	42
Financial Globalisation Propels Financial Inclusion in India	Sudip Jana	57
Book Review	Biswajit Guha	69

# **ARTHA BEEKSHAN**

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## Artha Beekshan, Volume 26, No 4, March 2018

Publication of *Artha Beekshan*, the quarterly referred journal of Bangiya Arthaniti Parishad, that is, the Bengal Economic Association, is one of the most important academic activities of the Association. The present volume, **Volume 26, No.3** of the Journal, is published containing the selected papers contributed by scholars and invited papers. We are thankful to the authors and members who have helped in one way or other in the preparation of this volume.

I would like to extend my whole-hearted thanks to the Editorial team, the Publisher, and all who have helped in the publication process, and especially the office bearers of Bangiya Arthaniti Parishad for their kind endeavours to make this issue of **Artha Beekshan** viable and **Kolkata Mudran** for bringing out the present issue.

**Editor in Chief**

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## INDIAN CLASSICAL THOUGHTS vs MODERN THOUGHTS ON ECONOMICS AND DEVELOPMENT\*

V.R.PANCHAMUKHI #

In this brief Essay, We propose to present some of the salient features of what one may call as the Indian Classical Thoughts and those of Modern Thoughts on Economics and Development. We propose to call the former, for convenience, as Indian Classical Social Science Thoughts (ICSST) and the latter as Western Social Science Thoughts (WSST).

Principles and Foundations of Social Sciences:

Often it is believed that social science is somewhat a recent concept originating in the Seventeenth-Eighteenth century A.D. in the West. We are taught that Adam Smith of 18<sup>th</sup> century (1723 – 1790) is the father of economic Science as a whole. The concepts of Development, Demand, Supply, Consumption, Capital, GDP, Growth, Society, Nation and Community are projected to be modern concepts of western vintage. Such conceptions are grossly erroneous. In the ancient Indian classical literature we get many fundamental and innovative insights into the diverse dimensions of social sciences, such as, conception of the individual, that of society, holistic Development, social welfare, principles and ethics of socio-economic activities, values and norms of human behaviour, —which together constitute, what one may call as the principles and foundations of social sciences. I would endeavour to present some of the salient features of the principles and foundations of social sciences as pronounced in the ancient Indian literature (which has been mostly in Sanskrit) and which are often pursued and expanded in scope and content in the literature of the later period.

I may hasten to add that the famous “Kautilya’s Artha Sastra” of 6<sup>th</sup> -7<sup>th</sup> Century BC constitutes the first written Treatise on ICSST, which draws heavily from all the vintage writings of the previous periods and which has had lot of significant impact on the vintage thinkers and writers of the subsequent periods. Kautilya’s Artha Sastra covers various aspects of modern Science, such as, Public Finance, Governance, Production and Trade Activities, Human Science, Ethics and related Issues.

Let me clarify at the outset that the term *Philosophy* has often been misunderstood, in most Circles of Thinkers. It is wrongly understood as an intellectual exercise concerned with life beyond this life. When we understand it to be concerned with the principles of life in this very

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world then we realize that the massive literature on Indian Philosophy sets out the Foundations and Principles of Social Science of our Classical Thought process. This is the framework we adopt in this brief Essay. This approach brings of the antiquity of the Indian Classical Social Science Thought (ICSST) and its profoundness.

Let me hasten to add that various Thinkers of later vintage, such as, Dadha Bhai Naoroji, Loka Manya Tilak, Mahatma Gandhi, Dada Saheb Ambedkar, Ram Manohar Lohia, Deen Dayal Upadhyaya, V.K.R.V Rao, Amartya Sen and others, to name only a few, have derived their inspirations, either for full endorsement or for partial critical appraisal, from the literature of ICSST. We will not elaborate on this for want of space and time.

I would try to bring out the distinctive nature of these foundations in contrast to the framework of social sciences as evolved in the modern western literature, in which we often specialize and which we often use as a basis for teaching, Research and for analyzing the contemporary problems of life. I would also argue out that the ancient Indian foundations of social sciences are much more holistic and practical in nature than the framework of the social sciences of western vintage.

I would cover the following dimensions for comparison: Economic Man vs Holistic Man; Goals of Behaviour; Determinants of Activities; Conception of National Welfare; Attitude towards Consumption and Savings; Foundations of Socialistic Principles; An Integrated View of Environment; Labour Market and Work Culture; Classification of Assets; Values and Principles of Management and Governance; Life Style and Resource Balance; An Integrated Model of Welfare. Though these dimensions appear to be disjoint, reflections on them would bring out the distinctions and profoundness of the ICSST as against the WSST.

Economic Man *versus* Holistic Man:

The western social science has based all its theory, analysis and prescriptions on the premises that man is a rational economic man and his basic objective is to optimize his economic benefits. In this purely materialistic approach there is no scope for the principles of morality or ethics either in the context of individual behaviour or that of group behaviour. Pursuit of Material self-interest and pursuit of consumption are the prime determinants of human behaviour. As against this partial conception of man, the ancient Indian perception conceived man in a holistic framework as a proper blend of Materialistic Man and what one may call as a Spiritual Man, with focus on *Values, Ethics and Morality* of human behavior as against the purely Materialistic aspects of life.

The concepts, such as, happiness, welfare, sustainability, work culture and governance will have to be redefined and understood in a proper perspective.

### *Goals of Human Behaviour*

The basic objective of social sciences is to analyze the behaviour of the individual in the context of his cherished goals and understand the implications of micro-level phenomena for the welfare of the society as a whole. In this context, it becomes important to understand as to what goals the individual chooses and how they conflict with the cherished goals of the society as a whole. While the western framework of social science conceives only materialistic self-interest as the prime determinants of the individuals' behaviour, the Indian classical thought perceives the goals of behaviour in a holistic framework. The materialistic self-interest in the former is defined in different forms, such as, individual consumption expenditure, individual income and profits. In contrast to this, the Indian classical thought has perceived the goals of human behaviour in an integrated manner, in terms of *Dharma*, *Artha*, *Kama*, and *Moksha*. While *Artha* means capital formation and *Kama* stands for consumption expenditure, *Dharma* and *Moksha* have some distinctly different implications for individual's behaviour. *Dharma* stands for value system or codes of conduct and it signifies the message that pursuit of materialistic self-interest should be couched in a framework of ethics and morality. The goal of *Moksha* has relevance also in our everyday life in so far as it prescribes the feature of freeing oneself from the bondages of narrowness, selfishness, and other mental prejudices. It is only when the mind is freed from prejudices and biases, that man becomes efficient and committed to his duties. Our religious preachers have depicted *Moksha* as a state of ultimate bliss, which can be realized when one is freed from all "bondages". In the practical everyday world, however, *Moksha* could be interrupted as a framework of mind, which takes the individual to a status, free from all prejudices and mental hang-ups. It is also believed that *Moksha* is a state of being very close to the Supreme Lord, who is a symbol of perfection, free from blemishes. Interpreted in a manner relevant for our everyday life, the status of *Moksha* should mean realization of perfection and freedom from bondages in our activities. Thus, the goal of *Moksha* should signify the goal of achieving highest efficiency and perfection. The etymological meaning of *Dharma* means values and ethical norms of good behaviour. It should be understood that the true meaning of *Dharma* does not imply only religion and rituals as is understood today. It signifies a set of codes of conduct for optimal ethical behaviour.

Taken together the four-fold goal of human behaviour, namely, *Dharma*, *Artha*, *Kama* and *Moksha*, implies realization of capital accumulation and consumption with highest efficiency in a framework of high moral standards and ethical discipline. This holistic approach of goals of human behaviour is in sharp contrast to the goals prescribed in the modern economic science of western vintage, which focuses only on the goals of maximum material self-interest.

### *Gross National Welfare Product*

Consistent with the framework of holistic man and the integrated approach to goals of human behaviour, the ancient Indian social science conceives the Gross National Welfare as the sum of the Gross National Materials Product and the *Gross National Values Product*. We are familiar with the concept of Gross National Product or Gross Domestic Product in the modern social sciences. The GNP or GDP refer only to the levels of materialistic production without any correction for the status of values imbibed in the society, while generating the material products. The result is that we often see the materialistic product increasing, while *the values* in the society are collapsing. If we plot the materialistic product on the *y-axis* and the level of “*values*” on *x-axis*, then we find that the recent path of development would be one of inverse relationship between the materialistic products and the values products. Obviously, both the individual welfare and the social welfare would be improved only when both the materialistic product and the values product are rising. The recent trends in the world imply deterioration of welfare of the mankind because we are not caring for either the preservation or the promotion of *Values* when material progress is taking place. It is here that the messages of the ancient Indian social science become relevant in designing our strategies for progress.

I may venture to pronounce that the society is presently facing a situation of *crisis of values* and that the agenda for reforms should be addressed to this crisis situation rather than addressing only to the crisis of either the failure of the market or that of the state. Collapse of values is much more dangerous than the failures of the state or the market. It is unfortunate that the modern theory and practice of social science has not come to grips with this subtle form of crisis, which the society is facing.

In the ICSST, there is no conflict between individual’s welfare and social welfare, since the latter is eminently incorporated in the former. The dictums, such as, *May all people in the Society be happy, (Sarve Janah Sukhino Bhavantu,)* *Let us all enjoy the schemes of Universal security of all and fruits of Development, (Sahanau avatu, Sahanau Bhunaktu), Let there be Peace at the individual level, at the Societal level and at the level of Nature, (the Significance of reciting ShantiH three times in Santi Mantras), Complete negation of Ownership Rights for any body on the Resources of the Globe (Implied in the Isavasya Upanishad),* clearly bring out this point. It should be noted that the traditional dictums need to be interpreted in the modern Jargons.

#### *Determinants of Activities*

In the WSST, there are many approaches and tools for the analysis of the activities taking place in the economic space. The approaches, such as, Production function (Cobb-Douglas, CES etc.), Koopman’s activity analysis, Leontief’s Input-Output Approach, Consumption function and Investment function, various demand and supply functions consider only some

materialistic variables for explaining the nature of the activities. The approach conceived in the ICSST, however, recognizes the most fundamental determinants of activity in a holistic framework. The ICSST provides an integrated model of activity, which envisages five types of basic determinants; Bhagavadgita spells out this Theory as per the Sankhya Shastra. The five determinants are: Contextual setting or initial conditions (*Adhasthanam*), Attributes of the performer (*Karta*), Different types of Instruments (*Karanam*, Basic instruments being *Indriya, Manas and Buddhi*), Different types of interactions among them (*Vividhah Chesthah*), and finally the divine hand (*Daivam*).

The WSST measures Labour, Capital, Raw materials and other determinants of the activity in a materialistic manner without looking into the attributes of the owners of these factors. In contrast to this, the ICSST gives focus on the human aspects of the determinants of the activity. Further, the attributes of the Performers (*Karta*) are spelt in three categories, as *Satvika Karta, Rajasa Karta and Tamasa Karta*.

We can clearly demonstrate that slow pace of development in India, over the past several decades, is largely due to the fact that we have not perceived the determinants of activities in this Holistic framework. Neglect of initial conditions, neglect of the role of the attribute of the performers, absence of sound work culture, failure to recognize the role of *divinity*, are some of the factors in this regard.

#### *Attitude towards Consumption and Savings*

The WSST model gives to maximization of consumption a place of primacy. Savings become only residuals. In contrast to this, the ICSST model prescribes restraint on consumption at individual level and envisages satisfaction of the basic needs of the maximum number of persons. The maximisation is in terms of the number of persons whose basic needs are satisfied and not maximization of the individual's consumption levels.

The excessive Consumerism that has engulfed the mankind in the present times under the influence of WSST models of growth, is the root cause for environmental pollution, ecological imbalances and overall non-sustainability of development. The ICSST model advocates a paradigm of Sustainable Consumption and shuns craze for consumption.

The ICSST prescribes a minimum saving rate of 33.33 percent for investment for future growth and advocates that part of income should be earmarked for *promotion of values in the society*. Thus, the ICCST model could be described as a Savings-Maximization Model and not a Consumption-Maximization model as in the case of WSST.

#### Foundations of Socialistic Principles

It is often believed that Karl Marx is the founder of the socialistic principles of development.

The Concepts of ‘Socialism’ and ‘Market Socialism’ are perceived to be concepts of recent vintage. Such perceptions are erroneous, because our ancient wisdom had given primacy to the vision of social welfare and social ownership of all resources. The famous *Isavasya Upanishad* clearly spells out that all the Resources of the Universe belong to the supreme Lord and each one can have only that share which is legitimately due to him and which is just necessary for his livelihood. There are many pronouncements in the ancient Sanskrit Literature that give place of primacy to the welfare of ‘others’ with sacrifice of ‘one’s own personal interests’. The benediction of *Shantih, Shantih and Shantih* is aimed at the fostering peace and harmony at the individual level, societal level and at the level of nature and environment. These profound principles of global welfare of the mankind as a whole are in contrast with the highly mercantilist view of the social science of the western vintage.

#### *An Integrated View of Environment*

Another concept, which makes the ICSST distinct from the WSST, is that of environment. The modern concept of environment covers the five entities of the physical world, viz. Earth (Prithvi), Water (Ap), Fire (Tejas), Air (Vayu) and Ether (Akasha). However, the ancient Indian wisdom covers four more basic entities, viz. Time (Kala), Direction (Dik), Conscience (Atma) and Mind (Manas). It is obvious that most fundamental pollution takes place when mind is highly polluted. Further, the ancient literature had proscribed pollution of water, earth, air and nature by inducting divinity in all these entities. There are specific instructions for not throwing wastes into the rivers, not to cut the trees and not to pollute air. The ancient Indian wisdom had had much more fundamental approach to the question of avoiding pollution in our environment.

#### *Rights vs Duties and Labour market*

The ICSST model has given one of the most profound Labour Theories (*Karma Theory*), aimed at improving efficiency and happiness of the labour.

It is the theory of *Nishkama Karma*, which prescribes that each one should perform one’s own prescribed Duties with maximum commitment and with a feeling of service to God (Society).

Westerners have given a highly perverted interpretation of the theory of *Nishkama Karma*, stating that it abhors motivation, goals and commitments.

The above interpretation of the theory of *Nishkama Karma* is based on total ignorance of the true spirit of the theory and it is mischievous, to say the least. By not understanding the true meaning and purport of the theory of *Nishkama Karma*, we have now adopted in our society the perverted practice of *Nishkarma Kama*, meaning thereby, the audacity of trying to get our desires fulfilled without performing our Duties. The result is the emergence of a

system devoid of efficiency and good work culture. We should make all out efforts to induct the practice of good work culture in our society at all levels and in all spheres of life. The Japanese Industrial Culture is described to be characterized by three *C's viz. Commitment, Consistency and Competence*. Each one should be consistently committed and competent. These three *C's* are implied in the true concept of *Yoga*. Bhagavadgita says: *Yogah Karmasu Kousalam. Yoga is nothing but efficiency in one's own work.*

We have been functioning under the erroneous conception that worker's efficiency can be improved by adopting the approach of *carrots and sticks* as is being prescribed under the so-called Reforms agenda for Labour markets. The ICSST pronounces that work efficiency can be improved only when each worker is made conscious of his duties and is made to derive happiness by performing his/her duties. The characteristics of a *Satwika Karta* given in Bhagavadgita is worth noting here. A *Satwika Karta* is the one who is endowed with the following attributes: He is dispassionate; He does not at all appropriate all the credit to himself; He is full of courage and enthusiasm; and He is equanimous between successes and failures. Thus, the focus is on the attributes of the worker (performer, in general) and not on the materialistic environment around him. We should adopt this Labour Theory so as to bring about a new renaissance in the Labour markets in India.

#### *Values and Principles of Management and Governance*

The ICSST model prescribes a number of Values and Principles of management and governance, which are not conceived in the WSST models.

These values and principles are:

*Principle of Managing Oneself before managing others;*

*Value of Contentment;*

*Value of Cooperation;*

*Value of Caring and Compassion*

*Commitment, Consistency and Competence;*

*Principle of using Trust/Faith as a guiding principle;*

*Principle of giving to Knowledge and Wisdom the place of primacy in decision-making;*

*Principle of being unbiased and objective;*

*Principle of being Shrestha to become a leader;*

*Principle of Independence in Thinking.*

It is useful to refer to the elaborate description of *Raja Dharma*, given in the famous conversation between Bhishma and Yudhishtira in the *Anusasana Parva of Mahabharata*. In the famous conversation between Bharata and Rama, when the former comes to the forest to persuade Rama to come back to Ayodhya and take the reins of the Kingdom, (*Ayodhya Kanda, 100<sup>th</sup> Sarga*), we have the comprehensive account of the principles of Governance. This *Sarga* is known as *the Kacchit Sarga*, meaning thereby, an inventory of questions, on *how about and why* and it sets out the most basic principles of good governance. Rama cautions Bharata on the choice of his most confident ministers and sets out the profile of 14 types of weaknesses of the supreme authority of governance. Some of these blemishes of a good governor of a state, which need to be avoided, are the following: Absence of Duty-consciousness, Lack of concentration on the assigned errand, Not starting the project on which decision has been taken, Not honouring the commitments, and not safeguarding the secret facts of the state. This profile of *Do's and Don'ts* could be a good course material for the training of our IAS officers, MP's, MLA's, and Ministers. In the chapter entitled *Rajarshi Vrittam*, Kautily's *Arthashastra* sets out the necessary and sufficient conditions for an authority to become an efficient administrator. Why are we not teaching these to our administrators including our ministers?

#### ICSST Approach to Classification of Assets

The WSST considers the rates of return on the assets as the criteria for classifying the Assets. As against this WSST approach, the ICSST approach is more fundamental and effective. The ICSST model prescribes that an Asset should be classified as *Daivi Sampat and Asuri Sampat*, according to the attributes of the owners of the Assets. Bhagavadgita gives a comprehensive account of the attributes of the owners of the *Daivi Sampat and Asuri Sampat*. (*Bhagavadgita xvi*). Judged from these criteria, most of our private sector operators, in particular, the Multinational Companies constitute *Asuri Sampat*, meaning thereby, Destructive assets, which can not serve the cause of Welfare of the large masses of the relatively poorer and weaker segments of the society. Should we not endeavour to expand the *Daivi Assets* in our society so that individual welfare and national welfare are realized simultaneously.

#### *Life-Styles and Resource Balance*

The ICSST model envisages a framework of classifying the population of a society, into a 4\*4 Matrix, according to four professional categories and four lifestyles (The *Varnashrama pattern of Socio-economic order*). These are 1. Education and Research; 2. Defence and Security 3 Trade, Commerce and Production and 4. Services. This Classification of the Population is not by Birth but by Voluntary choice of the Professions. The Four Life styles are the following: 1. Life style of Studentship; 2, Life Style of Married Life; 3. Life Style of

Renunciation of Spurious Consumption and pursuit of public Service and 4. Life Style of Complete Renunciation and Pursuit of Preaching for Public Good and Asceticism It is envisaged that people belonging to different professions and different life styles have different propensities to claim/generate resources in the economy.

It is perceived that the configuration of the population into the 4\*4 matrix is constantly changing due to voluntary shift of population from one category of profession and life style to another profession-lifestyle category. This voluntary shift in the configuration patterns determines the nature of Demand and Supply of Resources and hence resource balance into a surplus/deficit/balance situation. Thus, the ICSST paradigm of development provides for management of resource balance through voluntary shifts in professions and life styles through the shifts in the patterns of the population configuration, in the 4\*4 matrix.

I wish that the finance minister includes professional categories and *life style* in his budgetary exercises and examines as to how resources could be conserved for a better welfare-oriented equitable society, by fostering the habit of *simpler resource-conserving life styles* rather than promoting a highly consumerist life style, as is being done to day. We have been trying to emulate the resource-intensive consumerist lifestyle of the western societies even though such a life style is not conducive to the cause of promoting national welfare. We should note that the excessive consumerism being pursued in the world is at the root of the ecological imbalances and environmental pollutions that we are facing in the world as a whole. It is high time that ICSST model of resource-conserving life style is adopted throughout the world.

#### *The Concept of Holistic Development of ICSST*

Another distinguishing feature of ICSST is its emphasis on, what one may call as Holistic Development as against the focus of the WSST, on Growth Rate of GDP. The concept of Holistic Development includes, three dimensions of the Development Process, viz. Growth Rate of GDP, Social Aspects of Development and the *Values and the Ethical foundations of the Growth Process*. The concept of Social Aspects of Development include the concerns, such as, Employment, Equity Issues and Empowerment of the Deprived Sections of the Society, such as, backward classes, women and Tribals. Thus, the concept of Holistic Development provides greater scope for improving the welfare of the Society. Thus, the ICSST provides a much more comprehensive paradigm for overall Development. Merely focusing on Growth Rate of GDP may lead to lopsided framework of Development, which may generate a jobless growth profile. It may also result in inducing a growth profile which increases inequities and declines the empowerment and also which may imply collapse of Values in the society. Hence it is better to adopt the strategy of Development based on

ICSST.

*An Integrated Model of Human Welfare of the ICSST*

The ICSST has developed a unique multidisciplinary model of happiness at the individual and national levels. The Kautilya's Artha Sutras eminently describe this integrated model of *Human Welfare*. The first set of *Sutras* run as follows:

*Sukhasya Mulam Dharmah; Dharmasya Mulam Arthah; Arthasya Mulam Rajyam; Rajyasya Mulam Indriya Jayah; Indriya Jayasya Mulam Vinayah; Vinayasya Mulam Vriddhosewa; Vriddhosevayah Mulam Vijnanam; Vijnanena Atmanam Vindet.*

For *Happiness and Welfare*, the first factor is *Value System*. Next comes capital accumulation as a determinant of happiness. For promoting Capital formation and Growth in a *values-oriented* setting, we need a sound and stable political system and order of governance (*Rajyam*). For this purpose, the people at the helm of affairs should desist *temptations* and should be free from corruption. For practicing the habit of *corruption-free* governance, they should have the habit of respecting the knowledgeable and should possess the attribute of modesty. For imbibing these qualities, there should be the spirit of deeper knowledge and scientific inquiry.

The above said welfare model is very unique in so far it is multidisciplinary, incorporating the prescriptions of economic science, sociology, ethics, political science, diplomacy, psychology and humanities. We are presently pursuing the goals of welfare on the premises of the prescriptions of WSST, which gives primacy to Capital as the sole engine of growth and welfare. Any deficiency in the availability of capital has to be met by borrowing and more borrowing. The approach of neglecting the *value system* in the pursuit of capital formation and growth is the root cause of miseries in the society of present days. Should we not adopt the ICSST model of human welfare rather than the in-human model of materialistic development which invariably implies reckless globalization and liberalization and privatization, which we are relentlessly pursuing today?

# INEQUALITY IN CHILD MALNUTRITION

SMRITIKANA GHOSH<sup>1</sup>

## ***Abstract***

*Malnutrition, especially child malnutrition is one of the major concerns of India like any developing country. In India, there is a significant percentage of malnourished children are found. However, the extent of malnutrition is not same everywhere across the country. To eliminate this problem from the society, the Government has to know the degree of malnutrition in different regions of the country. Main objectives of this paper is to divide the country in some regions based on the level of child malnutrition (in terms of stunting), find the depth of child malnutrition in those regions and to find group level inequality across the regions and across different socio economic factors. To do that, techniques of malnutrition gap index, Group Analogue Gini Coefficient etc. are used. The analysis shows that highest stunted region is highest not only in terms of number of stunting children but also in terms of depth of the stunting. On the other hand, among different socio economic factors, place of residence is a significant factor showing that rural children are more prone to be stunted than their urban counterpart.*

**Key Words: Inequality, Child Malnutrition, Underweight, Stunting**

**JEL Classification Codes :I 14, I 32, O15,R 11.**

## **I. Motivation**

Any imbalance between the nutrients the body needs and the nutrients it receives is known as malnutrition, which may take the form of either under-nutrition or obesity (Das, 2010). Child nutrition has long been considered as a social issue, related to rights of children. However, it has been identified later that it is more of an economic concern. Child malnutrition in early years of life results in substantial losses later during adolescence and adulthood. It is measured by indicators like under-weight, stunting and wasting. *Wasting* represents the failure to receive adequate nutrition in the period immediately preceding the survey and may be the result of inadequate food intake or a recent episode of illness causing loss of weight and the onset of malnutrition. Children whose weight-for-height (WAZ) is below minus three standard deviations (-3 SD) from the median of the reference population are considered to be severely wasted and those below minus two standard deviation are called wasted. The height-for-age (HAZ) index is an indicator of linear growth retardation and cumulative growth deficits. Children whose height-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are considered short for their age or *stunted*

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and are chronically malnourished. Similarly when this Z score is less than minus three standard deviation (-3SD), the child is called severely stunted. Stunting reflects failure to receive adequate nutrition over a long period and is also affected by recurrent and chronic illness. Weight-for-age is a composite index of height-for-age and weight-for-height. It takes into account both acute and chronic malnutrition. Children whose weight-for-age is below minus two standard deviations from the median of the reference population are classified as *underweight*. To capture the long-term malnutrition among children, normally stunting is considered as the most important measure and hence this paper focuses on height-for-age category. The measurement of the related z scores are calculated based on the reference population and its median. Normally, it is measured by specific software like ANTHRO provided by World Health Organization.

In 2013-14, among Indian children, 29.4% were found to be underweight, 38.7% were stunted, and 15.1% were wasted while 4.6% of her children were severely wasted children (UNICEF, 2015). India's share of malnourished children is in fact higher than most of the poorest countries of Sub Saharan Africa. The 2015 Global Hunger Index (GHI)<sup>1</sup> Report ranked India 20th amongst leading countries with a serious hunger situation. Strikingly, amongst the South Asian nations, India ranks third, behind only Afghanistan and Pakistan.

## II. Literature Survey

Incidence of any vulnerability might not be uniform across regions, economic groups and social classes. Thus, it is important not only to focus on the average incidence, but its distribution within different groups. Bêteille (1983) has demarcated two aspects of inequality: the relational and the distributional. Relational inequalities considers social structure in the form of relations of 'super ordination' or 'subordination', distributional inequality implies interpersonal differences in wealth or outcome indicators like health or educational status. According to Kunst *et al.* (2004) in the statistical analysis, it is important that the measurement of socioeconomic inequalities would be based on both measures of "relative inequalities" (such as Rate Ratios) and measures of "absolute differences" (such as Rate Differences). However, relative measures are used in most analyses as they are generally considered to be of most analytical interest. Regidor (2004) opines that when the objective is to measure health inequality, it is necessary to use univariate measures of inequality in the distribution of health like, Gini index or index of dissimilarity. However, if the objective is to estimate socioeconomic inequality in health, there are two options. The first is to incorporate the socioeconomic dimension in the well known measures of inequality like Gini index. The problem with these measures is that they may give similar results even when the relation between health and socioeconomic status is different. The second option is to use the other three types of measures mentioned: association, potential impact, or based on the ranking of the socioeconomic variable. In this case, there is no unanimously accepted criterion about

which measure is the most appropriate. According to him, limitation of most of these measures is that they can only be used to reflect socioeconomic inequalities in health when the socioeconomic variable is ranked hierarchically.

Wagstaff *et al.* (1991) outlined that the slope index <sup>22</sup> Slope Index of Inequality (SII) is used to reflect socio economic dimension of inequality of health. It calculates the mean of each socio economic variable and then rank classes by their socio economic status. SII is the linear regression coefficient shows the relation between the level of health or the frequency of a health problem in each socioeconomic category and the hierarchical ranking of each socioeconomic category on the social scale and the concentration index of inequality are giving an accurate picture of socioeconomic inequalities in health in spite of range or Lorenz curve. They prove it through different empirical examples. In a paper Wagstaff (2000) used Achievement Index<sup>3</sup> that captures both the average level and the absolute level of inequality of malnutrition and found thought provoking interesting results. They found that stunting, focusing on the Achievement index, moves Egypt (a low-inequality country) from sixth position to fourth, higher than Brazil and Russia (two countries with high inequality).

However, before going into detailed discussions of measurement of inequality, it must be recognised that there should be no value judgement that inequality is always bad and equality is always good. A homogenous group performing worse economic indicators would show low values of inequality measure, which must not be accepted as good outcome.

Using Concentration Index, one study on Ecuador shows that income is a crucial factor of health inequality (Larrea *et al.*, 2005). Kakwani *et al.* (1997) have discussed how health inequality can be studied using grouped data, when groups are formed on the basis of socio economic status. They have used mainly two widely used indices of health inequality, namely, Gini coefficient and Concentration Index. It also develops asymptotic estimators for their variances and clarifies the role that demographic standardization plays in the analysis of socioeconomic inequalities in health.

Joe *et al.* (2009) have mentioned that the distribution of endowments and positive maternal characteristics are significant in widening the gap between the child malnutrition among poor and non poor households. They also examined the inter group disparities in child malnutrition and made a conclusion that child groups privileged in terms of income, mother's nutritional status and education have lower malnutrition, whereas the group adverse in all three characteristics endures the most. They suggested the policies to reduce malnutrition inequalities should recognize that endowment revisions can be more effective if appended with behavioural interventions.

### III. Objectives of the study

Thus, my **first objective** is to get a detailed status report of child malnutrition across the country. Child malnutrition, measured by stunting, is expected to coexist with different socio-economic factors. Depending upon the share of stunted children in the total number of children, the states in India are to be classified to arrive at some kind of topology.

In this connection, the **second objective** is to find depth of malnutrition across different regions.

After finding that, my **third and final objective** is to find inter group inequality across different regions and socio economic variables.

### IV. Data Base

Unit level data of child age group in 0-5 years in nationally representing survey of National Family Health Survey (NFHS 3) third round (2005-06) is being used for the study. NFHS-3 covered all 29 states in India, which comprise more than 99 percent of India's population and was designed to provide estimates of key indicators for India as a whole and for all 29 states by urban-rural residence. Though this dataset is a bit dated now, alternative secondary unit level dataset representative at national level was not available till now.

### V. Methodology

In this paper basically two techniques are used to measure nutritional inequality from different angles. They are:

#### 1. *Malnutrition Gap Index*

To start with, in Chapter 2, initially I have used a measure named Malnutrition Gap Index which is very similar to the poverty gap index. Poverty Gap Index (PGI) is calculated as

$$PGI = \frac{1}{N} \sum_{j=1}^q \left( \frac{z - y_i}{z} \right)$$

Here, N= total population, z= poverty line,  $y_i$ = income of  $i^{\text{th}}$  person, q= number of people living below poverty line. In my analysis, I have used the same formula with a change of the meaning of the notations. In my case N= total population in the area, z= value of HAZ below which a child is called stunted= -2SD,  $y_i$ = value of HAZ of  $i^{\text{th}}$  child, q= number of children stunted in this region.

z score= (observed value –median value of the reference population)/standard deviation value of reference population. According to WHO, if z score is less than -2SD, he/she is classified as stunted. If the Z score is less than -3SD this particular child is called severely stunted.

### **2.Group Analogue Gini Coefficient**

The group analogue Gini coefficient  $G(h)$  is arrived at geometrically by measuring the area between the line of equality and GULP. It captures the group perspective of the inequality in the maternal healthcare utilization. Say the number of sub-groups be  $k$ ,  $k \geq 2$ , then the formula of  $G(h)$  to capture the magnitude of inter group inequality is as follows:

$$G(h) = 1 + \frac{[\sum_{j=1}^k t_j^2 U_j - 2 \sum_{j=1}^k t_j T_j U_j]}{U}$$

Here  $U_j$  is the health variable for the  $j^{\text{th}}$  group,  $t_j$  is population share of  $j^{\text{th}}$  group,  $T_j$  is the cumulative population share and  $U$  is the weighted average of the health variable. Here,  $U = \sum_{j=1}^k t_j U_j$ , where the group specific health variable ( $U_j$ ) is multiplied by population share and then summed to arrive at  $U$ . The range of  $G(h)$  is from 0 to 1. 0 means there is no group inequality and any positive value shows inequality. Higher the value of  $G(h)$ , higher is the inequality between the groups.

## **VI.Results and Discussion**

### **VI.1 Measurement of Child Malnutrition by WHO Norm: Region Level Analysis**

At first, I want to disaggregate India in terms of different versions of child malnutrition. Here the country is divided in four regions namely- lowest, lower, higher and highest. These four regions are segregated according to the quartile values. In my analysis, I have considered 19 major states and clusters of seven sister states clubbed under North East. The following table (Table 1) shows, according to WHO norm, the picture of child malnutrition in different states in terms of different indicators of malnutrition.

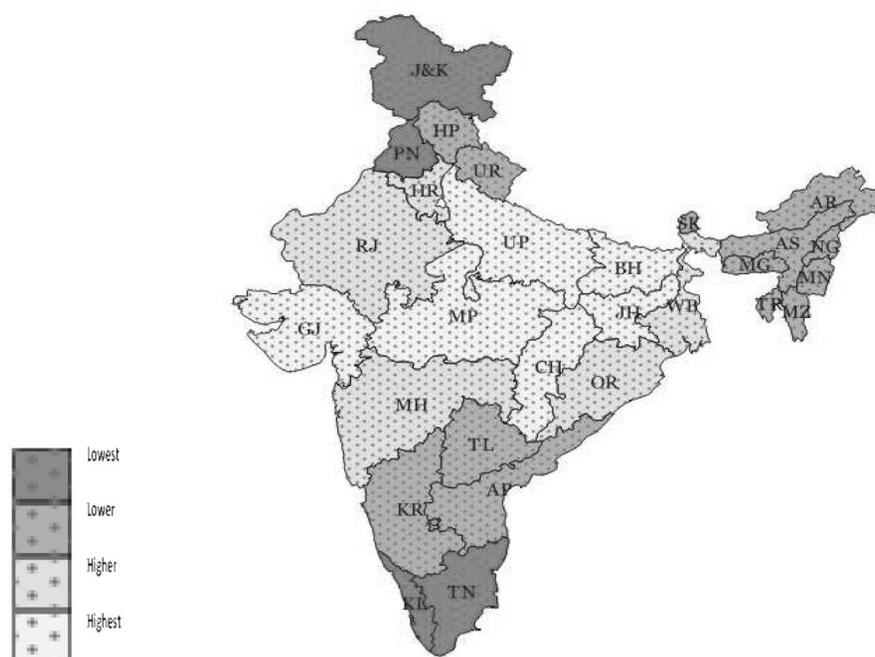
**Table 1: Distribution of states in terms of different types of child malnutrition**

	<b>Stunted</b>	<b>Wasted</b>	<b>Underweight</b>
<b>Lowest</b>	Punjab, Kerela, Tamil Nadu, Jammu & Kashmir	Punjab, Andhra Pradesh, Utter Pradesh, Jammu & Kashmir, Maharashtra	Jammu & Kashmir, Punjab, Kerela, Andhra Pradesh, Karnataka
<b>Lower</b>	Northeast, Karnataka, Andhra Pradesh, Himachal Pradesh, Uttaranchal,	Northeast, Karnataka, West Bengal, Kerala, Haryana	Tamil Nadu, Maharashtra, Himachal Pradesh, Utter Pradesh, Northeast
<b>Higher</b>	Rajasthan, Orissa, West Bengal, Maharashtra, Haryana	Orissa, Chhattisgarh, Gujarat, Uttaranchal, Himachal Pradesh	West Bengal, Uttaranchal, Jharkhand, Orissa, Haryana,
<b>Highest</b>	Jharkhand, Utter Pradesh, Madhya Pradesh, Gujarat, Chhattisgarh, Bihar	Rajasthan, Tamil Nadu, Bihar, Madhya Pradesh, Jharkhand	Rajasthan, Gujarat, Chhattisgarh, Madhya Pradesh, Bihar

**Source: NFHS III unit level data**

From different types of measurement of malnourishment, some interesting observations emerge from Table 1. On one hand, Punjab and Jammu & Kashmir belong to the group with lowest incidence of child malnourishment for *all* three types of measurement. On the other hand, Orissa belongs to the higher group according to all three types. One can find that Madhya Pradesh and Bihar belong to the cluster of states with highest incidence of stunting, wasted and underweight children. Gujarat, one of the richest states in India is a surprise addition in the group with the highest incidence of stunting and underweight children, in the same bracket with the most vulnerable states like Madhya Pradesh and Bihar. One interesting situation is in Tamil Nadu, which belongs to the lowest shares of stunted children and emerges within the group with highest share of wasted children.

Among all those measuring units of child malnutrition, in my analysis, I have considered stunting only for my subsequent discussions, as it is already mentioned that it captures the long run impact of child malnutrition. Figure 1 represents the quartile distribution of shares of stunted children across four regions graphically. However, the extent or specifically, the depth of malnutrition is not captured by this. Thus in the next section, I will discuss the depth of child stunting.

**Figure 1: Spatial distribution of Child Stunting in India in 2005-06**

Source: Data from Table 2.1

## VI.2 Depth of stunting across regions

To capture the depth of child malnutrition, I have followed the similar measurement like poverty gap index. Poverty gap index is a measure of intensity of poverty. It measures the depth of poverty i.e. how far on an average, the poor are from the poverty line. In this sense, it is an improvement over HCR, which only indicates how many people are poor. Similarly, we also have in our case, how many children are malnourished in different states with respect to different types of malnutrition measurement. However, there is no information regarding how far they are from the margin. Thus, the similar index of child stunting is created following the formula of poverty gap index. As we know, the formula of Poverty Gap Index (PGI) is

$$PGI = \frac{1}{N} \sum_{j=1}^q \left\{ \frac{(z - y_j)}{z} \right\}$$

Where  $N$  = total population;  $q$  = total population who are living on or below poverty line;  $z$  = poverty line and  $y_i$  is the income of  $i^{\text{th}}$  poor individual. The poverty gap index is a percentage between 0 and 100%. Sometimes it is reported as a fraction between 0 and 1. Theoretically, zero implies there is no one below poverty line and 1 implies everyone in the population is poor.

In my analysis I have followed this formula to capture the depth of child stunting across regions. Like poverty line, here the margin is  $-2SD$ . The children whose Height-for-age is below it is considered as stunted. The following table (Table 2) is showing the depth of child malnutrition region wise.

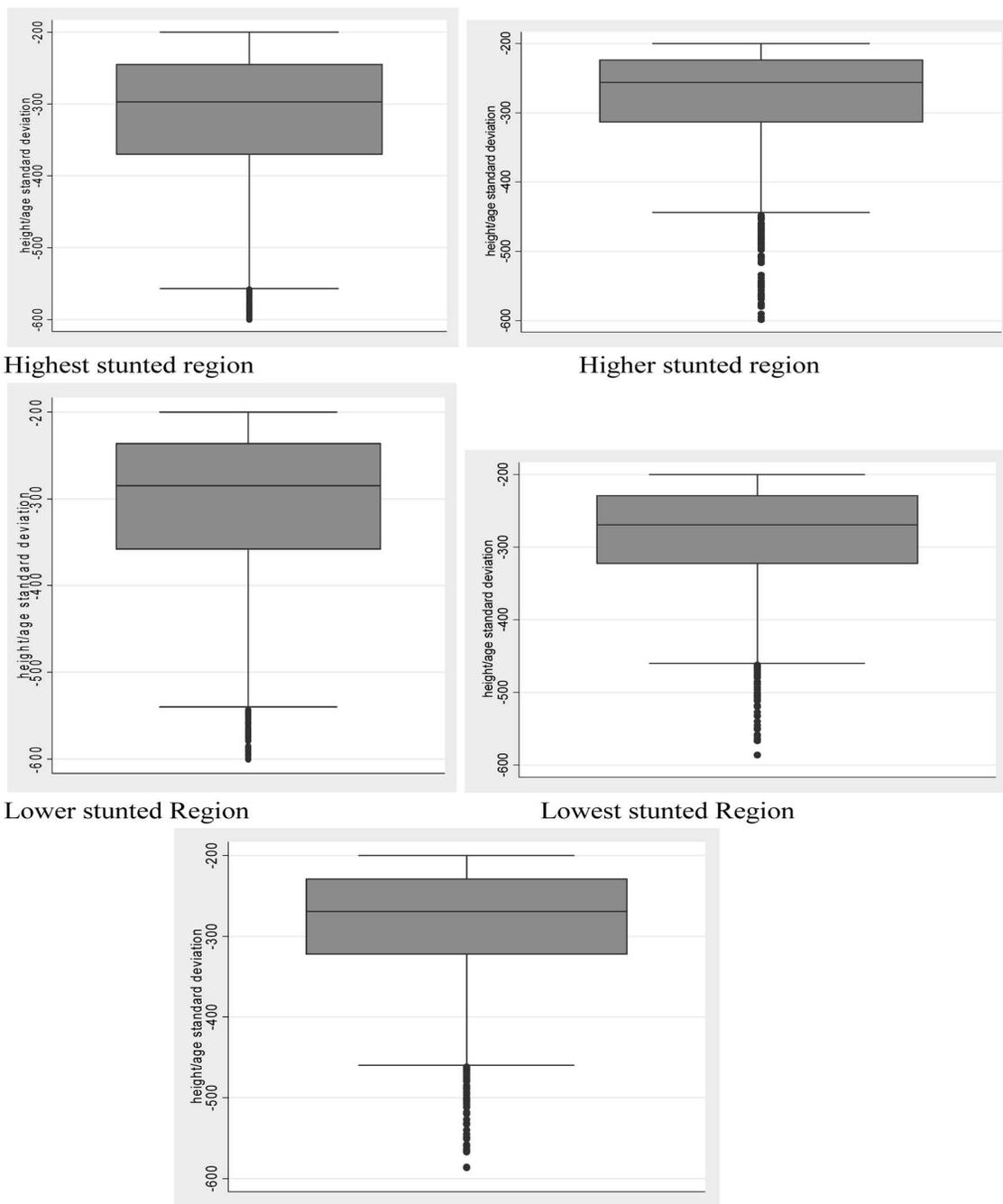
**Table 2: Region wise depth of child stunting**

<b>Region</b>	<b>Mean depth of stunting</b>
<b>Highest stunting region</b>	0.59
<b>Higher stunting region</b>	0.41
<b>Lower stunting region</b>	0.54
<b>Lowest stunting region</b>	0.44
<b>North-eastern</b>	0.51

*Source: Analysis of NFHS III unit level data*

Table 2 shows that mean depth of child malnutrition from the standard ( $-2SD$ ) is maximum in highest stunted region, followed by lower, north eastern, lowest and lower stunted regions. It implies not only percentage, but depth of stunting is also the maximum in highest stunted region. Though the share of stunted children is lower in *lower stunted region*, the depth of stunting in this region is second highest. On the contrary, in higher stunted region, the depth is minimum. That result implies that most of the stunted children have their respective z score very close to  $-2SD$  there in this region. This situation can be better explained in terms of box Figure (Figure 2).

**Figure 2: Box plot of child malnutrition level with respect to median value in Highest and Higher, Lower, Lowest and North eastern regions.**



North Eastern Region; Source: Analysis of NFHS III unit level data

Box plot in Figure 2 also explains that the sample distribution around median is concentrated maximum towards the standard value in the higher stunted region. In highest stunted region, the sample is distributed with skewness towards the lower values. That means more children have a tendency to be deeply malnourished than median value. In higher stunted region and lowest stunted region, the median value is around -2.5 and sample has same tendency as of highest stunted region. Lower stunted region has a median value around 2.5 and has more symmetric distribution of the sample around the median value. Also, the largest outliers below the -2SD norm is found in lowest stunted region.

However, this type of analysis cannot give us the exact value of inequality or specifically the extent of inequality. Thus in the next subsection, I am going to analyse more specifically the child nutrition inequality.

### VI.3 Inter group inequality

The Group Analogue Gini coefficient  $G(h)$  is arrived geometrically by measuring the area between the line of equality and Group Utilization Lorentz Profile (GULP) (as discussed in Section 1.5). Group Analogue Gini coefficient captures the magnitude of group inequality. In my study, the Group Analogue Gini coefficient across regions is 0.015 (Table 3) which is very low. It implies that regional disparity in terms of child nutrition is very small, when we consider the individual child separately.

Table 3 provides decomposed Group Analogue Gini coefficients across some socio economic characteristics. The objective here is to find out inter group inequality in child nutritional status, the HAZ score. For religion-related inequality, the total population is divided in four categories of religion-caste- Hindu General, Hindu others, Non-Hindu general and Non-Hindu others. Hindu general is ranked as 4, Hindu others as 3 etc. In terms of employment-education status of the mothers, total sample is divided in four categories- illiterate unemployed, illiterate employed, literate unemployed and literate employed. I have given rank to each of them also in this order. That means illiterate unemployed mothers are considered as maximum deprived and assume rank 1. In case of place of residence, rural is ranked one and urban area is ranked 2.

**Table 3: Group Analogue Gini for some socio economic variables and for regions**

Categories	Group Analogue Gini Coefficient
Region	0.015
Religion & Caste	0.011
Mothers' status of education and employment	0.023
Place of residence	0.455

*Source: NFHS III unit level data*

After making the groups either on the basis of malnutrition level or on the basis of some socio economic variables, I have calculated group analogue Gini for all those groups at all India level to check whether there is any intergroup inequality or not. In case of religion caste, the value is very small (0.011) i.e. there is no significant inequality of child nutrition across different groups in terms of region-caste. This is also true in case of education-employment (0.023). But, in case of place of residence the value (0.455) shows that there is significant inequality of child nutrition across the regions in terms of place of residence. Children belonging to rural areas suffer from stunting in far higher proportions.

## VII. Conclusion

From the above analysis one can conclude that,

- Punjab and J&K always belong to the group with lowest incidence of child malnourishment for all types of measurement. On the contrary, Orissa belongs to the higher group according to all types of measurement.
- Madhya Pradesh and Bihar are in the cluster of states with highest incidence of stunting, wasted and underweight children. Gujarat, one of the richest states in India is in the group with the highest incidence of stunting and underweight children, in the same bracket with the most vulnerable states like Madhya Pradesh and Bihar.
- With respect to wealth, India as a whole does not show any significant level of inequality.
- For child nutrition there is no significant inequality across regions, across religion-caste, across education-employment of mothers. However, there is significant level of inequality of child nutrition across place of residence. Thus, whether the child is living in rural area or not, really matters.

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# **SUSTAINABILITY OF INDIAN AGRICULTURE UNDER THE NEW ECONOMIC POLICY REGIME: A CASE STUDY OF WEST BENGAL**

**SUMANA MUKHERJEE<sup>1</sup>**

## ***Abstract***

*The paper examines the sustainability of Indian agriculture in the Neo liberal regime with a special emphasis on the state of West Bengal. In particular, the study highlights on the impact of the dual strategies of crop diversification as well as contract farming on food security. From an analysis of secondary data on crop diversification in West Bengal, it appears that as the process of crop diversification gathered momentum, the annual per capita availability of food grains decreased for most of the districts, endangering the food security of the people. Even primary data on contract farming collected from village survey indicates a fall in per capita availability of rice of the contract farmers as compared to the non contract farmers, other factors remaining constant. It seems that both the mechanisms of crop diversification and contract farming bear with it the risk of food insecurity for the large masses of population, if practiced on a large scale.*

**Key Words: Crop diversification, contract farming, food security, sustainability.**

**JEL CLASSIFICATION CODES :Q 13,Q18, R 14,R53.**

## **I. Introduction**

With economic liberalization and globalization, there has been a drastic change in the cropping pattern of the country from the traditional food grain crops to modern high value crops. The declining soil fertility and water level led to the wheat-rice cycle becoming unsustainable over the years. It is in this context that suggestions were forthcoming from World Bank experts (World Bank, 2005) to diversify Indian agricultural production activities in favour of less water intensive and more labour intensive high value crops including fruits, oilseeds and off-season vegetables. Agricultural diversification was emphasized in the Tenth Five Year Plan and the diversification drive was later boosted forward by the launching of a multi-cropped, multi-year contract farming scheme in 2002.

It is argued that the agricultural sector needs well functioning markets which effectively transmit market signals as well as improve prices for farmers and open greater market opportunities. Increased efficiency and competitiveness will enhance protection for consumers and the poor, but this requires a re-orientation of the role of the Government. Specifically,

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the government should stay away from direct intervention to create the competitive market environment and greater private sector entry and participation (World Bank Report, 2005). It was in this context that the mechanism of contract farming was adopted as a tool to promote diversification by the states for improving farm incomes and employment (Benziger, 1996; Singh, 2000). Contract farming is an arrangement which provides an assured price to the farmers thereby ensuring the availability of required quality and quantity of raw materials and at the same time reduces the risk of volatile prices and fluctuating market demand of the produce. On the other hand, it enables the small farmers to reduce the production risk and price risk associated with high value agriculture through an assured market and at the same time overcome their resource constraint.

Crop diversification and contract farming are two inter-related phenomenon. The issues of crop diversification and contract farming as the new emerging realities in Indian agriculture needs to be understood in the background of the past performance of agriculture and the nature of policies followed. The World Bank Report (2005) on agricultural sector in relation to sustainable growth and poverty reduction provides a good opportunity to stand a number of significant aspects in this connection. It is argued that just as in countries like China, Thailand and Brazil, industrialization is progressively playing a new role in economic development in India. Also there is a process of change in role for the agricultural sector. To appreciate the dynamics of farm production in a changed environment, the new policy regime must be to shift away from the over-emphasis on food grains which were the core point in the earlier approach. Thus, after attaining self-sufficiency in food grains, bold action is required to move away from the existing subsidy based regime to build a solid foundation for a highly productive and internationally competitive agricultural sector. One obvious element of the new policy focus evolves round the rationalization and phasing out of price support following the example of New Zealand which embarked on a programme to phase out all agricultural subsidies in 1984. However, the most significant component of the changing policy scenario seems to be support for agricultural diversification which essentially involves the element of contract farming and the emerging marketing relations (World Bank Report, 2005).

In a study by Dev and Rao (2005), it has been argued categorically that the government's minimum support price policy for rice and wheat has not been orderly in recent years. In fact, the volatile global price scenario for agricultural commodities had made it necessary to pursue a hike in support prices so that costs can be covered and food security threats can be avoided (Dev and Rao, 2005). However, the way support prices for wheat have been fixed, failed to be in parity with rice. Moreover, contrary to the expected interventions, in the context of a growing economy, public expenditures in agriculture have been at frustratingly low levels. This is apparently a constraint to encourage crop diversification over a longer period in a sustainable manner (World Bank Report, 2005). What the planners forget most often is that

public investment in infrastructure and other facilities is a form of implicit but effective subsidy to the crop enterprise in a developing economy. The government intervention so far has been mainly from the view point of a market orientation without looking into the positive long run consequences of a sustained public expenditure intervention (World Bank Report, 2005). Moreover, the recent thrust of the State Government on a policy of land conversion for industrial development has led to a number of questions being relevant to the problem of long – run food security (Bhattacharya and Bhattacharya, 2007).

Agricultural diversification undoubtedly implies a higher agro-exports growth, as different states e.g. West Bengal has, distinct physio-geographic zones suitable for the growth of diverse variety of crops. This in turn would improve our Balance of Payment position, thereby ensuring the achievement of a higher economic growth rate. But, at the same time, agricultural diversification in favour of high-yielding variety of crops brought about by means of crop substitution bears with it the risk of reducing the domestic availability of food grains. This policy induced change on the part of Government in favour of high value crops vis-a-vis food crops can adversely affect food security ultimately leaving the mass of the population worse-off, enhancing the possibility of increased dependence on world market for food-grains. The effect of globalization depend partly on whether the households are net consumers or net producers of food (Orden, Torero, Gulati, 2004) and their positions in labour and asset markets. With increased openness, the net consumers of agricultural products benefit from a large variety of products at reduced prices, while the net producers face increased competition from imported goods which might lower the prices of their products depending on their competitiveness. The ability of the households to adjust to these changes will in turn depend on household's access to markets, credit and insurance as well as on their physical assets and individual skill sets (Braun JV; Bonilla ED, 2008).

Of course there is some evidence of diversification of the food basket but as a consequence there has been larger decline particularly in cereals consumption which has not being made up by increased consumption of other foods. Crop diversification has often been thought to result in reduced household food supplies from own production due to reductions in area under cultivation of food crops. This creates increased vulnerability to food insecurity due to reduced food availability from own production. No significant improvements in household and individual food security seemed to have been associated with income increases among diversified farmers (Lunven, 1982; Fleuret and Fleuret, 1980; Dewey, 1979; Lappe and Collins, 1977; Hernández *et al.*, 1974; Gross and Underwood, 1971). In a globalised market system, diversification would ultimately result in a different kind of specialisation, threatening to destroy food self sufficiency of the developing nations. This transformation increases economic dependence of the country on the big players in the global market. In addition to this, the mechanism of contract farming also emphasises on the production of cash crops at the expense

of basic food crops in turn having an adverse effect on the food security of the country (Little and Watts, 1994). The market conditions for cash crops can shift very rapidly, reducing incomes derived from cash crops relative to that of food crops (Freidberg, 2004). These fluctuations in prices jeopardize livelihoods and living standards of people who depend on income from the particular cash crop and in the absence of opportunities for rapid crop substitutions or possibilities of other livelihood diversification, they can lead to catastrophe.

As regards contract farming, the general expectation is that it would contribute to increasing incomes of the rural small holders, besides giving a boost to the rural economy by generating a positive multiplier effect for employment, infrastructure and market development (Key and Runsten, 1999). The effect of contract farming on non contract farmers and the economy as a whole may not always be positive. In fact, what is favourable to the contracting firms and the farmers may harm other sectors of the local economy (Little and Watts, 1994; Porter and Phillips- Howard, 1995). Contract production leads to a shift in production in favour of export oriented and cash crops at the expense of basic food crops. This may lead to an increase in the prices for food products especially for the non contract farmers and the labour households who do not benefit from contracting in terms of higher incomes (Little and Watts, 1994) in turn having an adverse effect on the food security of the country.

In this context, the performance of agriculture has to be viewed in combination with the continuing need for food security since recent trends appear to have set back progress in tackling the problem of food security and under nutrition where India, as a whole, still lags behind other developing countries. As revealed from our field data, the small and marginal farmers of the surveyed villages in West Bengal also show an increasing tendency towards both crop diversification as well as contract farming primarily being induced by need. Hence such farmers are more vulnerable to the problems of food security.

The present paper is an attempt to highlight on the issues related to crop diversification, contract farming and food security. Using available secondary data for the major states of India as well as all the districts of West Bengal, covering the period 1980-81 to 2010-11 and primary data collected from field survey, the second section explains the research methodology followed in the study while the third section discusses the influence of crop diversification on food security. The fourth section highlights on the impact of contract farming on food security on the basis of primary data collected from two villages belonging to the agriculturally advanced districts of West Bengal namely, Burdwan and Hooghly. The final section summarizes the main findings of this paper.

## **II. Methodological Aspect**

The present paper involves both primary and secondary data. Secondary data have been collected from four major sources, viz -Statistical Abstracts, published by the Bureau of

Applied Economics and Statistics of the Government of West Bengal, District Statistical Handbook, published by the “BUREAU”, Statistical Appendices to Economic Reviews of the State Government and Agricultural Statistics at a Glance, published by the Ministry of Agriculture, Government of India, RBI. We employ the Crop Diversification (CDI) index in determining crop diversification for the particular crops of interest. In particular, we use Simpson’s Crop Diversification index (SCDI or CDI) to measure degree of crop diversification.  $CDI = 1 - \sum (p_i / \sum p_i)^2$ , where  $p_i$  is the area under  $i^{th}$  crop and  $i = 1, 2, 3, \dots, n$  is the number of crops. The CDI is an index of concentration and has a direct relationship with diversification such that a zero value indicates specialization and a value greater than zero signifies crop diversification. Thus, it becomes easy to identify those farmers who are practicing crop diversification.

For the purpose of primary data collection, the Pepsico contract farming districts are considered where contract farming under potato is in progress. Initially, six districts appeared in the list which are Burdwan, Birbhum, Bankura, Hooghly, Howrah and Midnapur (West). Out of these, the districts selected purposively in our study are Hooghly which ranks first both in terms of area and production of potato followed by Burdwan commanding respectively 21.17 percent and 7.83 percent of area under potato cultivation. Two different blocks were selected purposively one from each district, with one having urban proximity namely, Burdwan II Block and the other, Pandua Block having a distant location to gain a comparative picture of the relative differences in contract farming motives arising out of the differences in the location of farmers. At the third stage of micro level selection of the study area, one village each from the respective blocks is selected purposively for conducting household survey. The village Shaktigarh was selected in Burdwan district which falls under the Barsul Amra Mouza and Barsul Gram Panchayat of the Burdwan II Block. The village selected in Hooghly district is Panpara of the Panpara Mouza and Berela Konchmali Gram Panchayat of the Pandua Block. Contracting in Shaktigarh is between private individuals and the company (which is the Pepsico International in both the villages), while contract in Panpara is between a collective group of individuals and the company. Finally, 100 households from each of the villages selected were drawn following a random sampling technique without replacement by ensuring the inclusion of both the contract and the non contract farmers.

We have used multiple regression model to determine the influence of various factors like amount of land possessed by an individual farmer, presence of alternative sources of income of the farmer and the farmer type on the per capita annual availability of rice of the contract and non contract farmers. Such a model appears to be also helpful in determining whether the system of contract farming has any impact on the per capita annual availability of food grains to the farmer family. In other words, such a model will enable us to investigate the effect of contract farming on food security.

The regression equation estimated is:

$Y_j = b_0 + b_1A_1 + b_2A_2 + b_3A_3 + u_j$  Where  $b_0$  = intercept,  $b_i$  = the co-efficient of the  $i^{\text{th}}$  explanatory variable  $i=1,2,3$   $A_1$  = amount of land possessed by an individual farmer,  $A_2$  = presence of alternative sources of income of the farmer,  $A_3$  = farmer type,  $u_j$  = random disturbance,  $j=1,2,3$ . For the above model, the hypothesized relations are as follows:

- i.  $H_0: b_0 = 0$  against  $H_0: b_0 > 0$
- ii.  $H_0: b_1 = 0$  against  $H_0: b_1 > 0$
- iii.  $H_0: b_2 = 0$  against  $H_0: b_2 > 0$
- iv.  $H_0: b_3 = 0$  against  $H_0: b_3 > 0$

Our apriori expectation is that as the amount of land possessed by an individual farmer rises, the per capita annual availability of rice of the farmer also rises. Besides, the presence of alternative sources of income of the farmer is expected to increase the per capita annual availability of rice of the farmers. Moreover, it is supposed that the farmer type will have a negative impact on the per capita annual availability of rice of the farmers, thus threatening food security. Also, while doing so, we have conducted a test for heteroscedasticity and multicollinearity among the variables considered for regression analysis and we have reported the corrected results for the multiple regression models.

### **III. Crop Diversification and Food Security**

The food security system of India is one of the largest in the world but is confined mostly to provisioning cereals. Since its inception after the food shortages of the mid- 1960s, this system has managed to help the country avoid famine. Of late, Government of India claims that there is “over supply” of food grains relative to demand, and so infers that food grains production should be cut back in favour of “diversification”. However, Patnaik (2008) points to a decline in food grain supply and an even more drastic decline of effective demand for food grains especially in rural India owing to an abnormally fast loss of purchasing power. Further, Gulati (2006) shows that cereal consumption in India has fallen and that of high value commodities such as fruits and vegetables has increased not only among the upper income group but also among the people living below the poverty line. Even a study on annual per capita availability of food grains at both macro and micro level in India points to a declining tendency over time signifying that the increasing importance to agricultural diversification has a negative influence on food security. The statewise annual per capita availability of food grains for some of the major states of India is given in Table-1.1.

**Table-1.1: State wise Annual Per Capita Availability of Food grains (in kg)**

States	1980-81	1985-86	1990-91	1995-96	2000-01	2005-06	2010-11
Andhra Pradesh	186.58	193.72	185.39	175.42	210.33	222.42	216.89
Assam	149.97	167.98	153.56	158.88	156.31	137.98	149.61
Bihar	189.5	209.46	189.97	200.73	145.26	103.46	135.32
Gujrat	131.29	80.27	117.25	99.73	50.11	121.45	146.97
Haryana	467.78	630	580.77	615.77	628.74	614.73	708.34
Karnataka	158.33	157.85	142.28	192.22	207.87	255.23	197.86
Kerala	50.99	47.24	38.18	33.46	24.03	20.05	15.79
Madhya Pradesh	325.18	400.67	271.95	273.08	168.78	218.65	280.93
Maharashtra	155.42	139.83	154.35	147.01	104.61	124.76	111.63
Orissa	226.66	261.02	219.28	214.85	135.42	199.97	152.87
Punjab	708.96	1023.83	949.05	976.54	1039.6	1033.88	1024.72
Rajasthan	189.06	230.87	248.48	217.4	177.69	202.54	283.73
Tamil Nadu	113.34	148.19	133.16	114.67	138.08	98.18	140.73
U.P.	237.32	308.47	256.42	275.8	257.01	243.15	251.95
West Bengal	149.01	164.23	165.55	189.29	172.31	195.67	162.27

*Source: Computed from data collected from Agricultural Statistics at a Glance, Ministry of Agriculture, Government of India, RBI*

The data reflects a mixed pattern in annual per capita availability of food grains in the states. While annual per capita availability of food grains has decreased in the agriculturally backward states of Assam, Bihar, Kerala and Orissa during the period 1995-96 to 2010-11, the same has increased significantly in the agriculturally enterprising states of Andhra Pradesh, Punjab, Haryana, Tamil Nadu and in Gujarat. However, states like Karnataka, Madhya Pradesh experienced only a marginal increase in annual per capita availability of food grains during the same period. Thus it appears from our study that globalization has increased the gap between the agriculturally advanced states having a market orientation and the agriculturally backward states thereby enhancing the possibility of potential food crisis in the latter.

West Bengal being a predominantly an agricultural state also share similar experiences. There is a reduction in annual per capita availability of food grains following the economic reforms. A similar observation holds for the districts as well. The district wise annual per capita availability of food grains in the state of West Bengal is presented in Table-1.2.

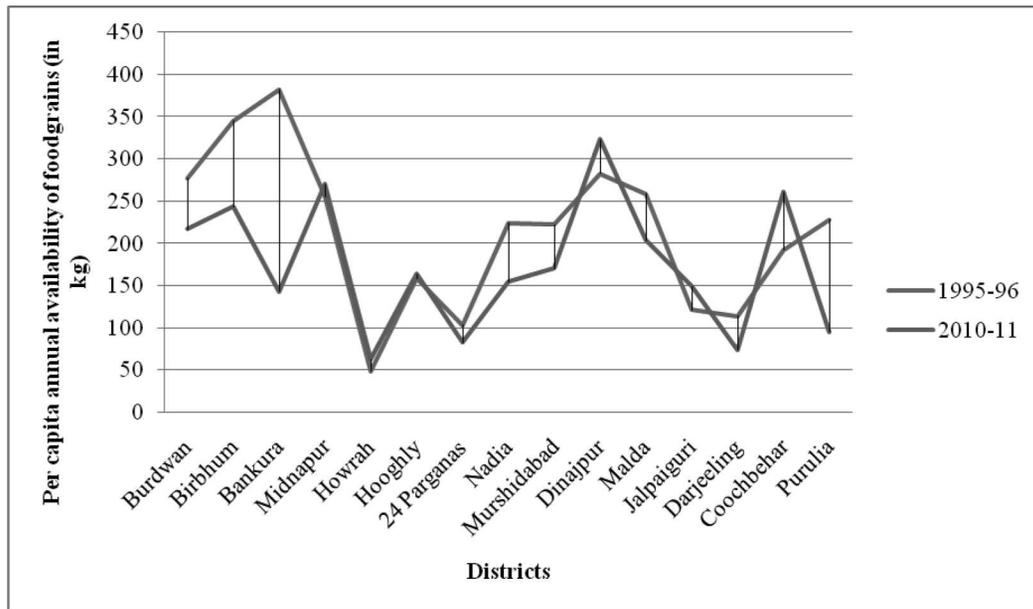
**Table-1.2 :District wise annual per capita availability of food grains (in kg)**

Districts	1980-81	1985-86	1990-91	1995-96	2000-01	2005-06	2010-11
<b>Burdwan</b>	212.68	215.78	235.93	277.39	231.01	286.42	216.67
<b>Birbhum</b>	302.94	299.6	330.29	345.04	295.85	400.21	243.66
<b>Bankura</b>	258.46	300.74	308.94	382.38	318.45	322.05	143.24
<b>Midnapur</b>	191.2	223.16	187.08	255.87	274.56	255.55	270.31
<b>Howrah</b>	53.79	67.78	62.98	48.72	53.05	67.09	63.11
<b>Hooghly</b>	147.5	138.95	140.68	158.71	100.85	169.18	164.12
<b>24 Parganas</b>	89.74	86.66	91.41	103.68	98.78	100.9	83.21
<b>Nadia</b>	134.47	195.87	215.49	224.29	183.18	190.21	154.87
<b>Murshidabad</b>	162.27	201.86	209.91	222.59	167.01	261.6	170.49
<b>Dinajpur</b>	250.48	262.63	270.75	282.67	308.27	346.04	323.61
<b>Malda</b>	190.12	220.49	240.12	258.78	209.3	240.45	203.87
<b>Jalpaiguri</b>	144.34	135.18	98.27	121.37	129.81	132.66	149.55
<b>Darjeeling</b>	96.46	111.01	93.16	113.85	71.22	66.31	74.18
<b>Coochbehar</b>	171.48	184.07	199.16	192.8	231.77	242.22	260.58
<b>Purulia</b>	193.06	251.21	181.47	228.81	203.51	220.22	95.29

*Source: Computed from data collected from Statistical Handbook, various issues*

These clearly reflect that for most of the districts of West Bengal, per capita annual availability of food grains (P.C.A.A.F) have reported a decline over time compared to the period 1995-96 when the process of agricultural diversification started gaining momentum with the opening up of the Indian economy with the world economy. Thus, agricultural diversification seems to have a negative impact on the food security of the state as a whole. The district wise declining tendency of per capita annual availability of food grains for the time points 1995-96 and 2010-11 is also reflected in the Figure-1.1:

**Figure-1.1: District wise annual per capita availability of food grains (in kg) for the time points 1995-96 and 2010-11**



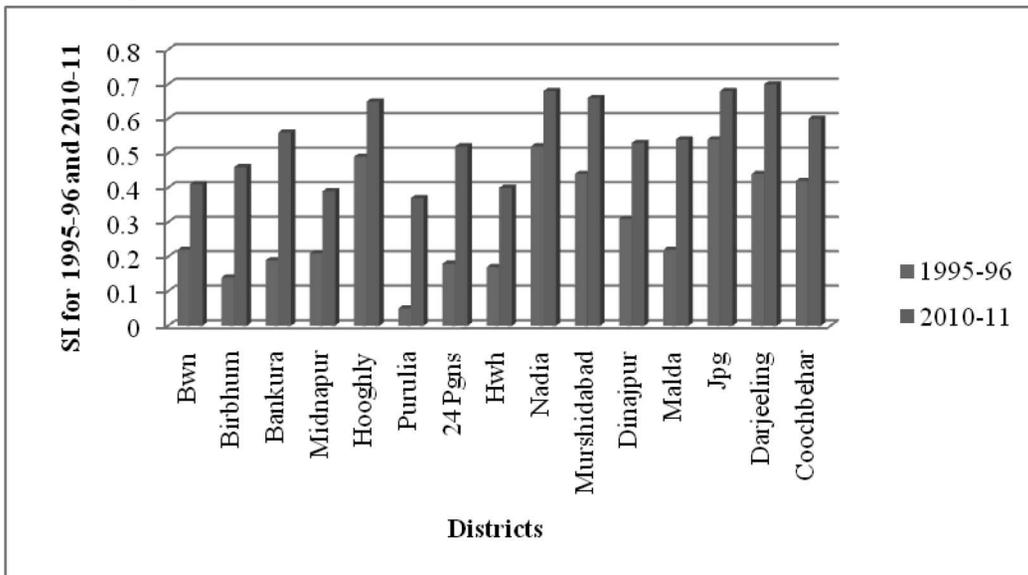
The time-series data on crop diversification index (SI) reported in Table-1.3 and Fig-1.2 clearly reflect that diversification was considerably low in the pre-reforms period. Between 1990-91 and 2010-11, the diversification in crop pattern has increased for most of the districts and this has been accompanied by a fall in per capita availability of food grains. For instance, the most diversified districts like Darjeeling, Nadia and Murshidabad have experienced a significant reduction in annual per capita availability of food grains from 113.85 kg, 224.29 kg and 222.59 kg in 1995-96 to 74.18 kg, 154.87 kg and 170.49 kg respectively in 2010-11. Even the moderately diversified districts of 24 Parganas, Bankura and Malda share similar experiences. Purulia which was one of the least diversified district in the state immediately after the introduction of economic reforms with SI value of 0.06 in 1990-91, has now shown considerable progress in terms of diversifying its agricultural activities with SI value increasing to 0.37 at the expense of reducing annual per capita availability of food grains from 181.47 kg in the year 1990-91 to 95.29 kg in the year 2010-11.

**Table-1.3: Simpson Index of crop-diversification for different districts of West Bengal**

Districts	1980-81	1985-86	1990-91	1995-96	2000-01	2005-06	2010-11
<b>Burdwan</b>	0.24	0.25	0.30	0.22	0.28	0.36	0.41
<b>Birbhum</b>	0.15	0.19	0.23	0.14	0.22	0.34	0.46
<b>Bankura</b>	0.16	0.15	0.21	0.19	0.20	0.38	0.56
<b>Midnapur</b>	0.12	0.13	0.16	0.21	0.21	0.37	0.39
<b>Hooghly</b>	0.42	0.46	0.49	0.49	0.59	0.60	0.65
<b>Purulia</b>	0.04	0.05	0.06	0.05	0.03	0.23	0.37
<b>24 Pdns</b>	0.22	0.20	0.19	0.18	0.26	0.45	0.52
<b>Howrah</b>	0.23	0.19	0.14	0.17	0.28	0.36	0.40
<b>Nadia</b>	0.47	0.54	0.47	0.52	0.58	0.65	0.68
<b>Murshidabad</b>	0.36	0.44	0.41	0.44	0.52	0.56	0.66
<b>Dinajpur</b>	0.39	0.45	0.30	0.31	0.39	0.50	0.53
<b>Malda</b>	0.27	0.33	0.26	0.22	0.33	0.51	0.54
<b>Jalpaiguri</b>	0.50	0.55	0.51	0.54	0.55	0.48	0.68
<b>Darjeeling</b>	0.49	0.53	0.38	0.44	0.50	0.64	0.70
<b>Coochbehar</b>	0.43	0.41	0.35	0.42	0.43	0.59	0.60

*Source: Computed from data collected from Statistical Handbook, various issues*

**Fig-1.2: Simpson Index of crop-diversification for different districts of West Bengal for the time points 1995-96 and 2010-11**



Recently, even the district of Burdwan which has traditional expertise in the growth of paddy has been diversifying its agricultural activities in favour of high value crops (SI increasing from 0.3 in 1990-91 to 0.41 in 2010-11) while reducing annual per capita availability of food grains in the district from 235.93 kg to 216.67 kg in 2010-11. Similar picture holds for the district of Birbhum. The rising trend of crop diversification indices in all the districts of West Bengal in the Post Liberalization period is clearly revealed in Fig-1.2 where X-axis represents the districts of West Bengal while Y-axis measures the Simpson Index of diversity.

According to the value of crop diversification index for the year 2010-11, we have classified the districts of the state of West Bengal as least diversified (value of SI being  $< 0.5$ ), moderately diversified (value of SI being  $\geq 0.5$  but  $< 0.6$ ) and highly diversified areas (value of SI being  $\geq 0.6$ ). The table below reflects the relative position of each of the districts so classified in terms of per capita annual availability of food grains for the year 2010-11 in comparison to the year 1995-96, when the process of agricultural diversification started gaining momentum in West Bengal. Table-1.4 reveals that as the process of crop diversification gathered momentum, the annual per capita availability of food grains decreased for most of the districts of West Bengal, thus adversely affecting the food security of the people.

**Table-1.4: Districts of West Bengal classified in terms of per capita annual availability of food grains (in kg) and Simpson's Index of crop-diversification**

<b>Crop diversification Index (SI)</b>	<b>Districts with Increasing Per capita Annual Availability of Food grains (in kg)</b>	<b>Percentage of Increase between 1995-96 and 2010-11 (in %)</b>	<b>Districts with Decreasing Per capita Annual Availability of Food grains (in kg)</b>	<b>Percentage of Decrease between 1995-96 and 2010-11 (in %)</b>
<b>Highly Diversified Districts (SI ≥ 0.6)</b>	Hooghly	3.41	Nadia	31
	Jalpaiguri	23.2	Murshidabad	23.4
	Coochbehar	35.2	Darjeeling	34.8
<b>Moderately Diversified Districts (0.5 ≤ SI &lt; 0.6)</b>	Dinajpur	14.5	Bankura	62.5
			24 Parganas	19.7
			Malda	21.2
<b>Least Diversified Districts (SI &lt; 0.5)</b>	Midnapur	5.64	Burdwan	21.9
	Howrah	29.5	Birbhum	29.4
			Purulia	58.4

**Source-Field Survey, 2012-13**

We have also computed rank correlation coefficient between per capita annual availability of food grains and crop diversification index for the years 1995- 96 and 2010- 11. The estimated coefficients (-0.2679 and -0.1152 for the years 1995- 96 and 2010- 11 respectively) show an inverse association between per capita annual availability of food grains and crop diversification index. The estimated values of rank correlation coefficient suggest that this negative association between crop diversification and per capita annual availability of food grains is likely to be weakened over time.

The small farmers of the surveyed village seem to show an increasing tendency towards crop diversification and hence they are more vulnerable to the problem of food security. Keeping this in view, the problem of declining per capita annual availability of food grains becomes all the more serious in a small farm dominated state like West Bengal.

**IV.Contract Farming and Food Security**

Contract farming being a rapidly emerging institutional mechanism which enforces a link between the primary producers and the agri-business companies is often viewed as a lucrative policy instrument to bridge the gap between the low income small holders and the modern sector by most Government and policy makers in the LDC's. However, contract farming

primarily emphasises on the production of cash crops at the expense of basic food crops, which in turn may adversely affect the food security of the country. We have attempted an alternative exercise to analyse the effects of contract farming on the annual availability of food grains per family as well as per capita annual availability of food grains in each of the villages surveyed (Tables- 1.5 and 1.6).

The tables clearly reveal that the annual availability of food grains per family as well as per capita annual availability of food grains (measured in terms of the main staple food crop of rice) is not affected at all due to the presence of contract farming practices. In fact, the contract farmers are found to have a higher annual availability of rice per family as well as per capita annual availability of rice compared to the class of non contract farmers in both the districts. This is quite implicative. In particular, we may argue that if the contract crop is one belonging to the existing crop basket of the farmers, then it is less likely that contract farming creates any obstacle to food security. In fact, potato is a crop which is cultivated on a large scale in this region such that a mere change in the mode of farming arrangement is less feared to create any adverse impact on food availability through an effective decline in the area under traditional cereal crops.

**Table-1.5: Annual availability of food grains per family and per capita annual availability of food grains of contract and non contract farmers in Shaktigarh (in kg)**

Size class	Contract Farmers		Non contract farmers	
	Annual availability of rice per family	Per capita annual availability of rice	Annual availability of rice per family	Per capita annual availability of rice
< 0.5	1966.67	421.42	1768.75	280.19
0.5 ≤ 1	3353.85	726.67	4280.00	906.78
1 ≤ 2	6754.55	1350.91	5980.00	1067.86
2 ≤ 3	29968.57	4195.60	24883.33	3317.78
3 ≤ 4	0.00	0.00	17800.00	2542.86
All	8025.11	1578.16	6269.81	1111.37

*Source: Field Survey, 2012-13.*

**Table-1.6: Annual availability of food grains per family and per capita annual availability of food grains of contract and non contract farmers in Panpara (in kg)**

Size class	Contract Farmers		Non contract farmers	
	Annual availability of rice per family	Per capita annual availability of rice	Annual availability of rice per family	Per capita annual availability of rice
< 0.5	2024.71	435.69	1427.91	259.62
0.5 ≤ 1	3002.79	622.53	3600.00	771.43
1 ≤ 2	5587.50	1064.29	2850.00	335.29
2 ≤ 3	0.00	0.00	0.00	0.00
3 ≤ 4	16500.00	1500.00	0.00	0.00
All	3752.39	741.88	1957.13	353.69

*Source: Field Survey, 2012-13.*

However, the above table does not reflect the actual picture because it neither neutralizes the impact of the amount of land possessed by the farmers nor it is possible to control the effect of other sources of income of the farmers on the per capita availability of rice of the farmers so that we can arrive at some conclusion regarding the influence of the farmer type on the per capita availability of rice of the farmers. So we run a multiple regression analysis to study the impact of change in one of the independent variables on the dependent variable by controlling the impact of the other variables. The regression equation estimated is:  $Y_j = b_0 + b_1A_1 + b_2A_2 + b_3A_3 + u_j$  Where  $b_0$  = intercept  $b_i$  = the co-efficient of the  $i$ -th explanatory variable  $i=1,2,3$   $A_1$  = amount of land possessed by an individual farmer  $A_2$  = presence of alternative sources of income of the farmer  $A_3$  = farmer type  $u_j$  = random disturbance,  $j=1,2,3$  Also, to counter the likely problem of heteroscedasticity and multicollinearity among the variables considered for regression analysis, we have applied Generalized Least Squares technique and we have reported the corrected results in Table-1.7. **Table- 1.7: Multiple regression analysis of factors influencing per capita availability of rice of the farmers**

<i>Explanatory Variables</i>	<i>Estimated Coefficients</i>
PER CAPITA AVAILABILITY OF LAND	4965.21 (47.13)*
ALTERNATIVE SOURCES OF INCOME OF FARMERS	18.18
FARMER TYPE	-72.74 (-2.73)*
CONSTANT	21.87
F-Statistic	788.65
Sample Size	200

*Notes: i) Figures in first brackets are computed t-values.*

*ii) \*, \*\* and \*\*\* imply significance at 1, 5 and 10 percent levels respectively.*

*Source: Field Survey, 2012-13.*

The results reveal that there is a direct association between the amount of land possessed by an individual farmer and per capita availability of rice of the farmers. However, presence of alternative sources of income of the farmer does not seem to influence the per capita availability of rice of the farmers. More importantly, by controlling the impact of the other variables, it is seen that per capita availability of rice of the farmers is lower for the contract farmers than for the non contract farmers, other things remaining the same. This result is important as it indicates that the problem of food security might be endangered if contract farming is practised on a large scale.

### **V. Summing Up**

An analysis of secondary data on crop diversification at the state level reveals a mixed pattern in terms of the annual per capita availability of food grains. Thus it appears from our study that globalization has widened the gap between the agriculturally advanced states and the agriculturally backward states thereby raising the possibility of potential food crisis in the latter. Even from our district level data for the state of West Bengal, it appears that as the process of crop diversification gathered momentum, the annual per capita availability of food grains decreased for most of the districts, endangering the food security of the people. Primary data on contract farming collected from village survey also indicates a fall in per capita availability of rice of the contract farmers as compared to the non contract farmers, other factors remaining constant. It seems that both the mechanisms of crop diversification and contract farming bear with it the risk of food insecurity for the large masses of population, if practiced on a large scale.

To solve this problem, a number of policies and actions can be identified that may lower production and marketing risks and assist diversified smallholder farmers in raising basic food crop production, thus reducing household food insecurity. Vigorous efforts must be taken on the part of the government to maintain high rate of research and development in technology improvement and development of seeds and plants, depending on our own biological and other resources and very rich local and traditional knowledge base. Food crops as well as cash crops should be targeted by extension services with a view to minimize household food insecurity. In terms of infrastructure, access to markets both for cash crops and for the marketed shares of food crops could be increased if rural roads are planned in areas where smallholder farmers are concentrated rather than where large production units are located.

Along with this to strengthen the position of small and marginal farmers who form the overwhelming majority, supply of cheap indigenous resource based technology should be supplemented with greater availability of credit and marketing facilities. This can be done by developing cooperative system in the areas of production, processing, marketing, consumption

and credit and savings. System of cooperation among farmers would also help in identifying better plant varieties and development of technologies suitable for local condition. Thus Indian rural sector, rich in local and traditional knowledge and resource base can be developed in a way completely different from what is suggested by the international authorities. Only then these high value cash crops can be utilized to raise household incomes, increase household productive capacities and raise state revenues that can be used to improve food security.

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# AGRICULTURAL TRADE AND SUSTAINABLE RURAL DEVELOPMENT IN INDIA

PIYALI CHATTERJEE\*

## *Abstract*

*The agricultural trade of India has undeniably evolved since a couple of decades post-independence and nonetheless, forms a quite an impressive part of the agricultural supply in the country. The export and import statistics of the agricultural sector, not only contributes in influencing the balance of payments of the country, but also has an intense implication on the development of the rural sector through different rural parameters or rural macroeconomic indicators of growth. Hence, the question of sustainability of rural development through modern developmental policies for agricultural production and trade gained nonetheless overwhelming importance, for the policy makers seeking to achieve at least the minimum requirement for food for the common masses. Agricultural trade has its own history of transforming along with time and apparently gained a lot of importance in the post-liberalization era. The current paper as such, intends to delve deep into the agricultural trade scenario in India and analyze the parameters dwelling in the rural areas, which have been affected by the agricultural trade.*

Keywords: Trade, Agriculture, Export, Import, Liberalization.

JEL Classification Codes: Q01, Q17.

## **I. Introduction**

While turning over the pages of the Indian agricultural history, a glimpse at the agricultural trade in India, creates a vivid impression on the mind and nonetheless provokes the enthusiast to feed his inquisitive thoughts as to the details regarding the phenomenal change encountered by the Indian agriculture throughout the decades specifically since the second half of the 20<sup>th</sup> century.

The agricultural trade in India has transformed along with the changing times of the country and arguably has been the victim of the international trade policies post-liberalization in the '90s. The rapid transition of the agriculture along the passing decades post-independence and of late coupled with the emergence of new policies in relation to the agricultural trade, led to the question of the contribution of these policies towards the sustainable development in agriculture and agricultural trade scenario. The controversies as such surrounds as to the benefits and limitations of the new trade policies as formulated by the international institutions

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namely, the WTO, and its effects on the Indian cultivators striving to make a living out of the farm and the non-farm, produce. Through the over-whelming presence of the agricultural trade as such, the path to a sustainable rural development perceivably lies hidden in the agricultural development, nonetheless through the development of the agricultural trade.

Apart from the vulnerable Indian farmers, the agricultural trade invariably affects the teeming millions of the country, who is directly dependent on the agricultural sector for food supply, and indirectly through the industrial sector for supply of agricultural raw materials used for producing consumer food and non-food, products. Changes in agricultural exports and imports, affects the food supply of the nation and the demand for agricultural commodities through the changing food prices affected by the prevalent agricultural pricing policies. Trading in agricultural commodities, at the world platform, nonetheless, affects the domestic market of the trading nations which in turn, affects the other sectors dependent on the agricultural sector.

It is important to mention here that agriculture in India which employs a vast section of the rural workforce, is affected by the changing international trade policies in terms of the employment generated by it since such polices often requires a transition from the rural society to an urban society. In the year 2016-17, out of total 131.29 million persons employed in 58.5 million establishments, 67.89 million persons (51.71%) were employed in rural areas. Agricultural establishments provided employment to around 22.88 million persons (17.42%) and the non-agricultural establishments provided employment to around 108.41 million persons (82.58%). As such, there is a significant dependence on rural establishments for living and as such, long-run sustainable livelihood.

Coming to the agricultural trade, 'the additional challenge of international trade is that it may put economies under pressure to undertake the transition more rapidly' (ILO,2013). Hence, agricultural trade remains a critical component of the agricultural development and the development of the nation 'as the sector's role in poverty reduction is undeniable' (ILO, 2013).

## **II. Agricultural Trade- A Review of the Pre-Colonial & the Colonial Past**

The agricultural trade in India has come a long way since the ancient times where the foreign crops were introduced and the Indian agricultural products reached the world market through the then existing trading networks. Spice trade consisting spices like cinnamon and black pepper was shipped to the Mediterranean. Coming to the pre-colonial period, amongst the agricultural produce, India exported cotton textiles largely and also raw silk, indigo, opium, rice, wheat, sugar, pepper and other spices. Regarding the commodity composition of trade, the salt and grain trades were the two great voluminous trades of the pre-colonial period (Banerjee, 2012). In the colonial period 'From the last quarter of the nineteenth century until

the Great Depression, exports from India consisted of primary commodities (wheat, rice, cotton, jute, wool, oilseeds, semi-processed hides, and skins) and the largest import, cotton textiles' (Roy,2014).

The colonial period as such encountered a transition of the economy into commercialization of agriculture. Hence, the establishment of the British rule brought fundamental economic transition in India, transforming agriculture from subsistence to commercial with the introduction of cultivation of variety of new crops such as tobacco, groundnuts, indigo, jute, tea, coffee etc. and gradual industrialization of the economy(Banerjee, 2012).Such a transformation through agricultural trade led to the exploitation of the agricultural workers and the domestic manufacturers since India became a cheap market for purchase of agricultural raw materials and a profitable market for selling of imported commodities manufactured out of the same raw materials.

### **II.1. Agricultural Trade – A glimpse of the post-independence and the post-reforms era**

The decade of 1950s, witnessed the onset of the Five Year Plans which framed the agricultural policy with the objective of the economic development of the nation. The government initially in the Five Year Plans gave utmost priority to increasing output of food and fiber, which was considered indispensable for achieving the planned rate of growth of the economy. The Government attempted to achieve production through programs of land reform, technological improvement, improved credit, marketing systems, and enlarged agricultural research, education, and extension systems. Over the decade 1950-60, the value of free world export trade about doubled but the Indian share in it declined from 2.0 percent in 1950 to 1.2 percent in 1960(USDA, 1964). In the year 1959, India being the largest tea grower in the world, accounted for 41 per cent of world tea exports. During the decade of '50s, export control was exercised on most agricultural items. Most of the imports and exports, except for those made on governmental account, were nonetheless subject to licensing. Though the principal export crop was tea but there were other commercial crops like oilseeds, cotton, jute, sugarcane, nuts, tobacco and the spices, which contributed to the foreign exchange earnings from the agricultural trade.

There had been a shift in the relative importance of some traditional agricultural exports from 1951 to 1961 which invariably implies the changes in the domestic production and the consumption. The exports of cashew nuts, wool, coffee, feedstuffs and sugar increased in value during this period whereas, exports of cotton, vegetable oils, tobacco, spices, and hides & skins declined in value over the same period. On the import front, imports of cashew nuts, nonfat dry milk and rubber had more or less steadily increased during the period 1951-61. It seems important to mention that, during this period wheat, cotton and rice continued to be the major agricultural import commodities notwithstanding large domestic production

of these crops; Burma had been the major supplier of rice and the United States had been the major supplier of wheat. In 1960-61, agricultural exports comprised about 48 per cent of the country's total exports, whereas in 1970-71, agriculture and allied products accounted for around 31.7 per cent of the total export earning of India which again fell to 30.6 per cent in 1980-81. The stagnation in agricultural exports was observed from 1980 to 1990 due to stagnation in world trade flow. As far as the imports are concerned during 1960-61 imported food articles (i.e., cereals, cereal preparations, animal and vegetable oil and fats) had a share of 16.6 per cent of the total imports, which fell to 15.4 per cent in 1970-71, to 6.4 per cent in 1980-81 to 2.2 per cent in 1990-91.

However, the post-reforms era had its own saga of successes and failures in the agricultural trade history. In 1990-91, the export of traditional export items like tea, coffee, tobacco, cashew kernels and spices together accounted for 36.1 per cent of the total agricultural and allied products (AAP) exports, which decreased to 23.10 per cent in 2001-02. However, the exports of non-traditional items like marine products, basmati rice, fruits, vegetables, oil meals and processed foods have been increasing in the export basket. The agricultural exports showed a continuous increasing trend from 1990-91 to 2008-09. The agricultural imports also showed a rising trend during the same period, nonetheless agriculture being the net foreign exchange earning industry in the economy. To obtain a vivid understanding of the then status of agricultural trade let us see the following table:

**Table 1: Agricultural Exports and Imports in India**

Year	% of agricultural exports to total national exports	% of agricultural imports to total national imports
1990-91	18.49	2.79
1991-92	17.80	3.09
1992-93	16.84	4.54
1993-94	18.05	3.18
1994-95	15.99	6.60
1995-96	19.18	4.80
1996-97	20.33	4.76
1997-98	19.10	5.70
1998-99	18.25	8.17
1999-00	15.91	7.45
2000-01	14.28	5.31
2001-02	14.04	6.56
2002-03	13.58	5.92
2003-04	12.62	6.19

Source: Mathew (2006)

The above table clearly shows the mind-boggling presence of the agricultural exports in the national exports as compared to the agricultural imports in the national imports, in the post-reform decade. The agricultural exports as a percentage of total national exports was 18.49% in the onset year of liberalization in agriculture, which fell to 15.99% in the year 1994-95 rising to 20.33% in 1996-97 and then sharply falling to 12.62% in 2003-04. The share of agricultural exports to the total national exports sharply fell to 10.22 % in the year 2008-09. Coming to the recent past, the share decreased from 13.79% in 2013-14 to 12.46% in 2015-16.

Switching over to the agricultural imports scenario, the percentage share of agricultural imports to the total national imports kept on fluctuating over the years post -reform, but was highest in the years 1998-99, 1999-2000 and minimum in 2008-09 as world prices were much higher than Indian prices. However, the share of agricultural imports in the total imports increased from 3.16 % in the year 2013-14 to 5.63 % in 2015-16.

### **III. Agricultural Trade and Its impact on Rural Parameters**

#### **III.1. Agricultural Production**

The agricultural trade is the result of agricultural production and can simultaneously affect agricultural production. As such, both agricultural production and agricultural trade needs to be taken care of as both significantly contributes to the growth of national income through the growth in agricultural GDP. According to Dantwala, between 1911 and 1947, per capita availability of foodgrains considering international trade flows declined as much as 26 per cent. Indian agriculture, which grew at the rate of about 1 percent per annum during the fifty years before Independence, has grown at the rate of about 2.6 percent per annum in the post-Independence era (Tripathi & Prasad, 2009) from 1950-51 to 2006-07. Low production of foodgrains in the post-independence days, led to dependence on foreign countries for import of foodgrains. The decade of 1980s witnessed the process of diversification which led to growth in non-foodgrains output like milk, fishery, poultry, vegetables, fruits, etc. which nonetheless accelerated growth in agricultural GDP during the 1980s. The liberalization which took place in 1991 led to opening up of the market and as such affected the agriculture. At the onset of the economic planning in 1951, 76.7% land was put under food crops and around 23.3% of land on non-food crops. However by 2001, the area under food crops reduced to 65.83% and area under non-food crops increased to 34.17%. Thus, the reason behind this shift of land allocation is undeniably the shift from subsistence cropping to commercial cropping. Thus increase in volume of agricultural trade led to significant increase in non-food crop production. It was a mind-boggling fact, that the agricultural scenario turned adverse during post-WTO period, which included all the sub-sectors of agriculture. The output growth rates of all crops decreased from 2.93% to 1.57%; livestock output

growth rate declined from 4.21% to 3.40% and that of fisheries declined from 7.48% to 3.25%, but that of forestry increased from 0.09% to 1.82%.

### III.2. Poverty and Food Security

The question of the economic linkage between agricultural trade and poverty apparently lays emphasis on the economic linkage between agricultural trade and food security. The agriculture which caters to the agricultural trade is nonetheless, the basis for the rural livelihood through employment as well as through food supply. Hence the flourish of the agricultural trade in a globalised economy, will have implications on the rural livelihood through anticipated, reduction in poverty and enhancement of food security.

In rural area, the headcount ratio which was 56.4% in 1973-74, fell to 45.7% in 1983 and to 39.1% in 1987-88. Post-economic reforms it fell to 37.3% in 1993-94 and further decreased to 27.1% in 1999-2000. However, poverty declined at a lower rate in the 1990s than in the 1970s and 1980s.

The effectiveness of agricultural trade in mitigating the menace of rural poverty through increased income for the farmers and greater supply of food for the masses is nonetheless, an important question confronting the policy makers. Recently, the government has tended to show greater sensitivity to the interests of the farmer and there has been a willingness to give them the opportunity to sell the produce in the international market in which they can earn the highest price (Hoda & Gulati, 2013).

The important question is that how could increased participation in international trade affect the economic growth rate, and what implications will this have for the distribution of income and the incidence of poverty? (Ramasamy, 2004). The relationship between poverty and agricultural trade is explained with the following table:

**Table 2 :Growth in Poverty, Income And Prices**

Year	1970-71 to 1990-91	1991-92 to 1999-00
	Mean	Mean
Per capita AgGDP (current Rs.)	1025.38	4648.66
Rural population (BPL per cent)	48.69	33.43

Source: Ramasamy, 2004

Taking a span of 30 years 1970-71 to 1999-00, the per capita agricultural GDP increased on an average in the post-reform period than in the pre-reform period. Simultaneously, the

percentage of rural population below poverty line dropped from 48.69% from 1970-71 to 1990-91 to 33.43% from 1991-92 to 1999-00. The exports of agricultural commodities increased consistently during the post-reform era and had the highest growth rates. Consequently, the balance of trade improved with the liberalization of trade and its contribution to the country's GDP improved significantly. It is as such, an undeniable fact that the exports are an indispensable component influencing the growth of agriculture and as such, perceivably a strong catalyst in the reduction of rural poverty.

The issue of food security has been a daunting task to deal with, for the policy makers since the inception of the five year plans. The foremost objective of the food policy is to ensure food security to the poorest and as such, the trade policy tends to be guided and influenced by the overall food policy. Food security refers to achieving reliable access to adequate, affordable and nutritious food supplies sufficient to avoid chronic hunger (Singh, 2014). Since Independence, agricultural development policies aimed at reducing hunger, gaining food security and eradicating poverty. In 1951, when the Five Year Plan commenced, the Planning Commission, determined the food grain deficit of the country to be 6-7 per cent of production and emphasis was laid to end the dependency on imported food grains. India for many years, continued to depend on imported food grains. Net imports as a percentage of domestic output had increased to high levels during mid-1960s. The introduction of high yielding variety seeds in the decade of 60s led to huge production of foodgrains. In the mid-60s food self-sufficiency became the cornerstone of the development strategies in agriculture. However, mainly because of the availability of a high yielding technology in cereals, not only the task of food self-sufficiency was accomplished, the country fill-in the gap between the demand and supply of food grains without raising the real cost of production, a fact which is generally not appreciated (Sheshagiri et al, 2011). The import dependence for cereals had gone up to 16 per cent and the country faced severe droughts continuously for two years. Moreover, at the time of the Indo-Pakistan war in 1965, the USA declined the food aid to both the countries but more importantly the US administration refused to renew the PL 480 agreement on a long-term basis. In 1966, the net import of cereals (mainly wheat) at 10.3 Mt represented 19 per cent of the net domestic production of cereals.

Going further, the net cereal imports as a percentage of net domestic production declined from 9.6 % during 1966-70 to 4.1% during 1971-75, and further declined from 1.5% during 1981-85 to 0.7% during 1986-90, the reason being export of basmati rice and lower imports of wheat. India, since then became a net exporter of cereals, mainly due to the export of rice (both basmati & non-basmati). The export and import of cereals post-1980 has been represented in the following table:

**Table 3: India's imports and exports of cereals (million tonnes per year)**

Period	Imports	Exports	Net export
1980-81 to 1984-85	1.58	0.54	(-) 1.04
1985-86 to 1989-90	0.70	0.48	(-) 0.22
1990-91 to 1994-95	0.39	0.92	(+) 0.53
1995-96 to 1999-00	1.10	3.72	(+) 2.62
2000-01 to 2004-05	0.01	6.44	(+) 6.43
2005-06 to 2007-08	2.66	3.72	(+) 2.06

Source: Acharya (2009)

The above tabulated data of import and export of cereals, vividly manifests the fact that there had been negative net exports in the decade of 80s and positive net exports in the decade of 90s (which also witnessed the WTO regime) and in the first decade of the new millennium, implying higher exports than imports (as previously discussed) in the post-liberalization years. To be more specific, the net export of cereals were 0.53 Mt/year during 1990-95, which further increased from 2.62Mt/year during 1995-00 to 6.43 Mt/year during 2000-05.

The rate of decline in cereal consumption, was however, small during 1970s and 1980s, the period during which the real prices of cereals were declining simultaneously. In the decade of the 90s, the rate of decline of cereal consumption dramatically increased by around 70% due to steep increase in real prices of cereals in the same period.

The following table has been given to explain the intake of cereals by rural households since cereals forms a major part of the consumption basket in the rural India:

**Table 4: Changes in consumption pattern of rural households as revealed by quantity (kg) consumed per person per year, 1983 to 1999-2000**

Household category	Year	Cereals	Pulses	Edible oil	Fruits & veg.	Milk	Meat	Sugar
<b>Landless labour</b>								
	1983	166.1	8.2	2.7	39.4	16.8	3.3	8.1
	1987-88	162.6	8.7	3.5	47.0	26.2	3.6	9.5
	1993-94	149.3	7.4	3.8	61.4	23.9	4.4	7.4
	1999-00	148.4	8.5	5.1	70.3	25.5	4.7	8.0
<b>Farm households</b>								
	1983	187.5	11.7	3.6	50.2	41.4	3.7	11.2
	1987-88	186.2	12.4	4.4	60.3	56.6	4.7	11.8
	1993-94	171.3	10.2	4.8	74.4	65.8	4.4	10.6
	1999-00	161.2	10.9	6.0	79.3	68.1	5.4	11.0

Source: Chand (2004)

According to the NSSO data, per capita cereals consumption in rural areas fell from 15.3 kg per month in 1970-71 to 12.7 kg in 1999-2000 kg (IGIDR, 2006). The cereal consumption per person per year in both the categories of landless labour and farm households, have decreased in the decade of 80s and also in the 90s. In rural India, household per capita calorie consumption was 2,240 calories in 1983, 2,233 in 1987-88, and had fallen to 2,047 calories per head in 2004-05, a decline of 8.6% from 1983 (Deaton & Dreze, 2009). Decline in per capita calorie consumption has been accompanied by an *increase* in real average household per capita expenditure (Deaton & Dreze, 2009). However, household food security and nutrition have worsened during reforms, the reason for which seems to be high growth in prices of cereals caused due to government policy to give substantial hikes to cereal prices during reforms (Chand, 2004). Thus, the link between agricultural trade liberalization and food security is not straight forward (Singh, 2014).

According to Sharma (2015):

- (i). **1952-53 to 1972-73** – there had been a significant increase in per capita consumption expenditure at constant prices on cereals, fruits and vegetables, edible oils and sugar but the expenditure on milk and milk products and on eggs, meat & fish, declined.
- (ii). **1972-73 to 1992-93** – the consumption expenditure at constant prices on food items such as milk and milk products and meat products (meat, eggs and fish) and fruits and vegetables increased whereas in comparison the contribution of cereals was much less and also in comparison to consumption expenditure on cereals from 1952-53 to 1972-73.
- (iii). **1992-93 to 2012-13** – per capita consumption expenditure on food items such as meat and meat products(eggs, meat and fish), dairy products, fruits and vegetables increased significantly whereas there had been a decline in per capita consumption expenditure on cereals.

### **III.3. Income**

The average daily money wage earnings for all agricultural operations by agricultural labourers in rural labour household increased steadily and sharply between 1956-57 and 1977-78 for both males and females, at the all-India level and for all states(Ghatak,2006). However, during the period 1970-71 to 1984-85, according to research the states of Punjab, Haryana and Kerala, showed a high average level of money wages. Real wages increased in the 80s & the 90s.

The income from agriculture constitutes the farm income and the non-farm income. The income from the farm and non-farm output also includes the income from agricultural trade which consists of the net export earnings. The effect of agricultural trade on the income of the rural masses in India seems quite visible considering the effect of liberalization on agriculture. The effect on rural income during liberalization is explained as follows:

**Table 5: Growth rate in real income and level of income at current prices for different sections of rural population during 1987-88 to 1999-00**

Household category	Compound growth rate in income at 1987-88 prices %/year		Per capita nominal income Rs./year		
	1987-88 to 1993-94	1993-94 to 1999-00	1987-88	1993-94	1999-2000
Landless labour:	-0.26	2.59	1532	2661	4831
Cultivators:					
All size classes	-0.40	2.17	2180	3755	6652
Sub-marginal	-0.19	2.71	1887	3292	6019
Marginal	-0.37	2.73	1974	3407	6234
Small	-0.34	2.20	2097	3625	6430
Medium	0.10	2.57	2273	4036	7319
Large	-0.63	2.46	2772	4710	8487
All rural	-0.24	2.01	2122	3692	6478

Source: Chand(2004)

Real per capita income of rural households undeniably increased to 2.01% in the period 1993-94 to 1999-00 from negative rate of growth or decline of -0.24% in the period 1987-88 to 1993-94. Thus there had been an impressive impact on rural income from increased agricultural trade. The per capita income of landless labour has grown at a higher rate compared to the per capita income of farm households, possibly due to the growth rate in real wage rates for agricultural labour.

### III.4. Employment

The agricultural trade which is meant to bring agricultural development and rural development, affects the employment in the rural region. As per the agricultural Census, the Indian agriculture is dominated by the small and marginal farmers, who are basically subsistence farmers. Considering the broad distinction of agricultural workers into cultivators and agricultural laborers, there has been a significant change in the number of workers working as cultivators and agricultural labourers. This is vividly manifested in the following table:

**Table 6 : Agricultural Labourers in India(Million)**

Year	Rural Population	Agricultural Workers		Total Agricultural Workers
		Cultivators	Agricultural Laborers	
1951	298.6	69.9 ( 71.9 )	27.3 ( 28.1 )	97.2
1961	360.3	99.6 (76.0)	31.5 (24.0)	131.1
1971	439.0	78.2 (62.2)	47.5 (37.8)	125.7
1981	525.6	92.5 (62.5)	55.5 (37.5)	148.0
1991	630.6	110.7 (59.7)	74.6 (40.3)	185.3
2001	742.6	127.3 (54.4)	106.8 (45.6)	234.1
2011	833.7	118.7 (45.1)	144.3 (54.9)	263.0

Source: Agricultural Statistics at a Glance, Ministry of Agriculture (2014). Figures in parenthesis calculated as percentage of total agricultural workers.

It may be noted that trend towards casualisation of the rural labour force that pervaded during the 80s seems to have continued in the 90s. The agricultural sector witnessed a widespread process of marginalization of rural people. Post reforms, apart from casualization, there also had been feminization of workforce in rural areas, where the marginal women workers increased significantly and male main workers declined simultaneously. As such, there occurred a huge displacement of labour in agriculture due to a shift from subsistence farming to marketable crops, irrespective of regions the changes in crop patterns showed similar trend. All such shifts led to decrease in the labour required in agriculture. The proportion of female workers at all the industries level in the rural sector has increased marginally (0.5 per cent) during the entire period of reference (1983-99) (Jha, 2006).

### **III.5. Infrastructure**

It is undeniably true that better infrastructure leads to market expansion, facilitates to reap the benefits of economies of scale and brings improvement in factor market operations. This facilitates in opening up of the rural economy to greater competition from the outside world. The period from 1950/51 to the mid 1960s, which is also called the pre green revolution period, witnessed tremendous agrarian reform, institutional changes and development of major irrigation projects (Chand, 1999). During 1950s and 1960s institutional reforms like land reforms and development of irrigation and other infrastructure played a major role in output growth. Studies conducted at the state level for two periods of time 1970-71 and 1980-81, vividly manifested the fact that the deficiency of infrastructural facilities has been a major obstacle in the way of progress of developing states. Agricultural infrastructure has the potential to transform the existing traditional agriculture or subsistence farming into a most modern, commercial and dynamic farming system in India (Patel, 2010). Several studies have been conducted to study the effect of infrastructure on agricultural productivity and growth. The result of such studies clearly revealed the positive relationship between investment on infrastructure and agricultural growth along with effective rural development. Infrastructural development undeniably improves the process of commercialization of agriculture and is a strong driver in substantial reduction in rural poverty. There was a direct relationship between increase in acreage of export crop cultivation and the standard of roads and distance from the main commercial centers (Patel, 2010). Thus the growth of commercial agriculture invariably requires simultaneous development of rural infrastructure. However post-reforms (considering the period 1990-93 to 2003-06), the agricultural growth decreased sharply at the all India level and also in all regions. The main reason for the deceleration of growth during the post-reform period was a visible deceleration in investment in irrigation and other rural infrastructure (Bhalla & Singh, 2010). There had been a sharp fall in growth rates of yield in most parts of India. Thus, the rise in agricultural trade did not lead to rise in investment in infrastructure. A major reason seems to be decline in public investment in irrigation and non-availability of yield raising cost reducing new technology (Bhalla & Singh, 2010).

### **IV. Conclusion**

The agricultural trade nonetheless, is affected by innumerable factors and it in turn directly or indirectly influences the rural parameters as discussed. Agricultural trade through its mind-boggling presence in agriculture plays a key role in contributing to the agricultural GDP of the country and in rural development. It's overwhelming presence affects the lives and livelihood of the rural people. The agricultural trade scenario has come a long way from imports of wheat and rice in the 1960s to higher growth of exports in comparison to imports post 1990s. We can undeniably confirm that, whether be exports or imports, agricultural

trade is an indispensable component of the Indian agriculture, earning foreign exchange and also feeding the teeming millions to mitigate the problem of food security and poverty. As such, it seems that the policy makers wouldn't be wrong in expecting that trade in agriculture contributing in the wider economic development through affecting the rural parameters and bringing about broader rural development. It can be envisioned the arrival of not a too distant era when a farmer will be enjoying the fruits of organized agricultural trade supported by agricultural marketing and branding along with earning the farm gate price which nonetheless eradicates his poverty. The road to holistic development of the economy engulfs not only the rural development but the development of trade and commerce specifically agricultural trade which is a catalyst to agricultural growth and development in a predominantly agrarian economy like India. In this, the responsibility of bringing a broad-base development of agricultural trade lies not only on the policy makers but also on the other economic participants of the economy who are contributing in the agricultural sector of the economy.

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# FINANCIAL GLOBALISATION PROPELS FINANCIAL INCLUSION IN INDIA

SUDIP JANA<sup>1</sup>

## *Abstract*

*This paper discusses the progress in financial inclusion in India against the background of financial globalization process undergoing in the world economy. It is shown that India has made substantial progress in reaching out to the rural poor in providing services of financial connectivity, which would be both welfare enhancing and growth promoting in the future.*

**Key Words : Financial Globalisation, Inclusive Growth, Financial inclusion.**

**JEL Classification Codes : E 59, F42, O16.**

## **I. Introduction**

India's integration into the world economy blossomed in the First Globalisation. The trade/GDP ratio raised from 1 to 2 per cent in 1800 to 20 per cent in 1914. In 1940, when India was under colonial rule, restrictions on international trade and capital mobility were imposed throughout the Sterling Area as wartime measures. India gained independence in 1947, but emphasised autarkic policies, with a marked closing of the economy in the 1960s and 1970s. By 1970, the trade/GDP ratio had dropped to 8 per cent. By 1991, with experience and international comparisons for 44 years in hand, the intellectual and policy consensus shifted against autarky. India then embarked on reintegration into the world economy through trade and capital account liberalisation. By the mid 1990s, the trade/GDP ratio had got back to the 20 per cent value seen in 1914. Reintegration into the world economy took place on both the current account and on the capital account. The early initiatives in capital account decontrol were based on three ideas: It was believed that debt inflows and all outflows were dangerous; hence strong restrictions against debt inflows and all outflows were kept in place. It was believed that inflows into the equity market were beneficial, but only if they originated from certain kinds of investors. Thus investment vehicles such as pension funds and university endowment funds were considered good, while hedge funds and individuals were considered bad. Hence, a limited opening was undertaken, where certain kinds of 'foreign institutional investors' (FIIs) were able to register in India with the securities regulator, and then given substantial edibility including the lack of quantitative restrictions. While the official rhetoric

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was in favour of FDI, the removal of capital controls against FDI was limited in many sectors. Deeper liberalisation of capital controls against FDI took place later. This opening of the economy was a key element of India's growth acceleration of the early 1990s. The combination of these reforms of the capital account, and trade liberalisation, unleashed a complex dynamic of change in the economy and in economic policy.

Financial globalization could, in principal, help to raise the growth rate in developing countries through a number of channels. Some of these directly affect the determinants of economic growth ( augmentation of domestic savings, reduction in cost of capitals, transfer of technology from advanced to developing countries, and development of domestic financial sectors). Indirect Channels, which in some cases could be even more important than the direct ones, include increased production specialization owing to better risk management and improvements in both macroeconomic policies and institutions induced by competitive pressures or the "discipline effect" of globalisation. Financial inclusion is one of the effects of financial globalisation.

At the macro-level, efficiency without equity is not sustainable and equity without efficiency is not possible. Therefore, Financial Inclusion is very relevant in the present context. A part of India's policy objective was the promotion of equity and inclusive growth has recently become fashionable. Financial markets can play an important role in the advancement of growth and equity. In the post-liberalization period growth acceleration of the Indian economy was more or less consistent. The economy has been growing at an annual rate of 9 per cent or so during the previous years. But what has been the most troubling fact about its growth is that its growth has not only been irregular but also unpredictable. This growth has no uniformity in its performance and detached with regard to the expansion and distribution of growth benefits to certain sectors of the economy. So, policymakers and the politicians repeatedly talk about inclusive growth as the central objective. Resources are very much needed to attain the objective of inclusive growth and for resource production and mobilization financial inclusion is necessary. In the process of economic growth it plays a very vital function. Prerequisite of poverty alleviation and economic growth is the access to finance by the poor, deprived and underprivileged groups. The financial inclusion is a crucial element for poverty alleviation. In the rural area a large section of the population have no access to financial services and their only resource is to borrow from the moneylenders at the excessive charges causing exploitation. Financial exclusion seems to be one of the main reasons for keeping a large section of the rural population in the poverty trap. Financial exclusion is also proving to be a major obstacle in the path of India's economic growth or so to say inclusive growth. The main reasons of financial exclusion are lack of opportunities and access to finance, financial illiteracy, besides poor performance, apathy and negative approaches of the banks.

Therefore, the national objective and major concern for the economic policy decision makers is the financial inclusion. This essay addresses all concerned issues involved in achieving the national objective of achieving the complete financial inclusion.

## **II. Meaning of Financial Inclusion**

It was Y.V. Reddy, former Governor of the RBI, who coined the concept of Financial Inclusion in 2005. Later it received the widespread attention in India and abroad. It is considered as an important paradigm on development thinking. In simple words, it refers to as the proportions of individuals that use financial services and financial products. Financial Inclusion as defined by the RBI is “the process of ensuring access to appropriate financial products and services needed by all sections of the society in general and vulnerable groups such as weaker sections and low income groups in particular, at an affordable cost in a fair and transparent manner by regulated, mainstream institutional players”.

The Rangarajan Committee (2008) has defined Financial Inclusion as -

“Financial Inclusion is the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost.” In this definition financial services incorporate extensive services like access to savings, loans, insurance, payments and remittance facilities open by the official financial system.

Financial Inclusion should include access to financial products and services like- no-frill bank accounts, savings products, remittances & payment services, mortgage, financial advisory services, entrepreneurial credit, pension for old age, business correspondence & self-help groups, branchless banking, micro finance & micro credit facility and investment plan for child’s education. The intention of these services is to supply economic protection to the low-income groups.

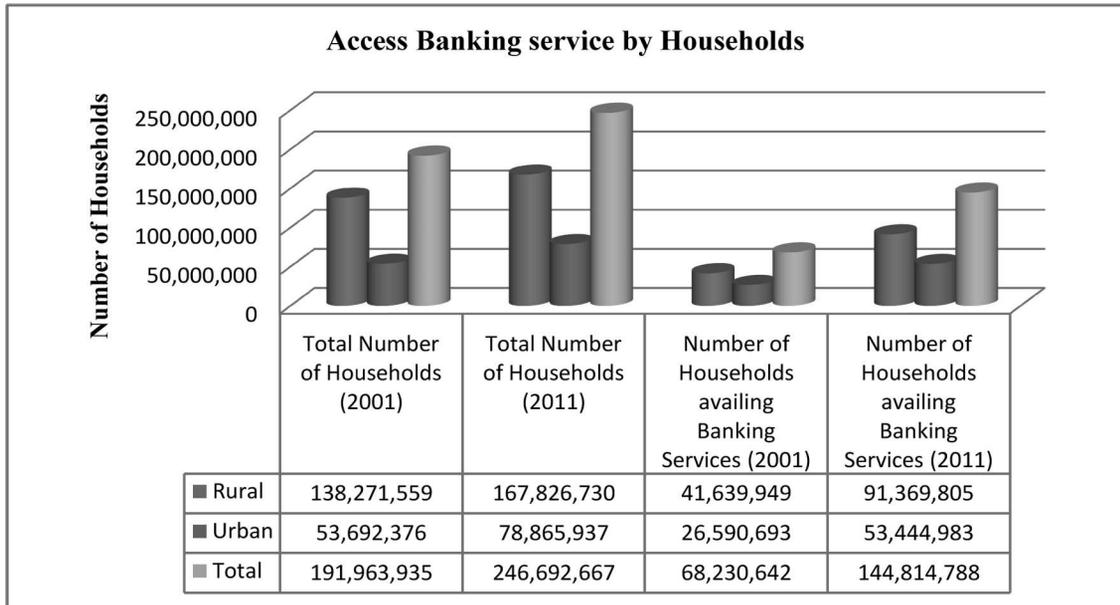
Pre-requisites for the success of Financial Inclusion are: appropriate technology, appropriate and efficient delivery model, mainstream banks’ determination and involvement, strong collaboration among banks, technical service provider, especially the state administration at grass-roots level, liberalization of banking and other micro finance model.

## **III. Present State of Financial Inclusion in India:**

The objective of Financial Inclusion is to extend financial services to the poor, deprived and underprivileged group of population of the country to accelerate its growth process. It helps in fostering individual saving, stimulates business and entrepreneurial activity. Financial exclusion thus tends to widen income inequality that hampers income and non-income outcomes. Financial Inclusion strives towards a more inclusive growth by making financing available to the poor in particular. It is therefore, an important tool for poverty alleviation and sustainable inclusive economic and social growth. In the following sections, we have

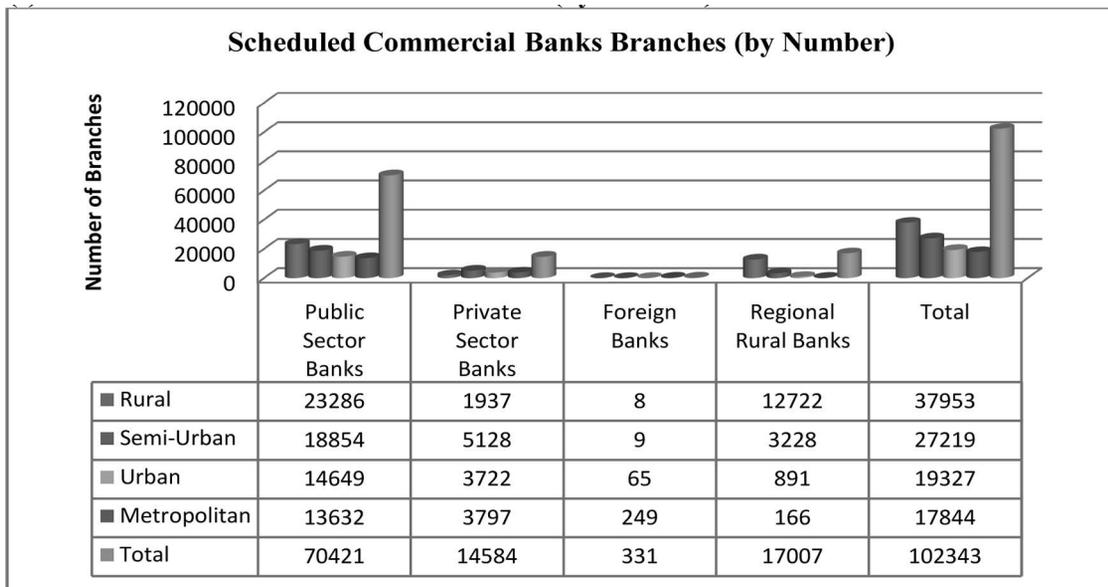
examined the current state of Financial Inclusion by studying the data on access to banking services, branch expansion and credit expansion.

### 1. Access to Banking service by Households:

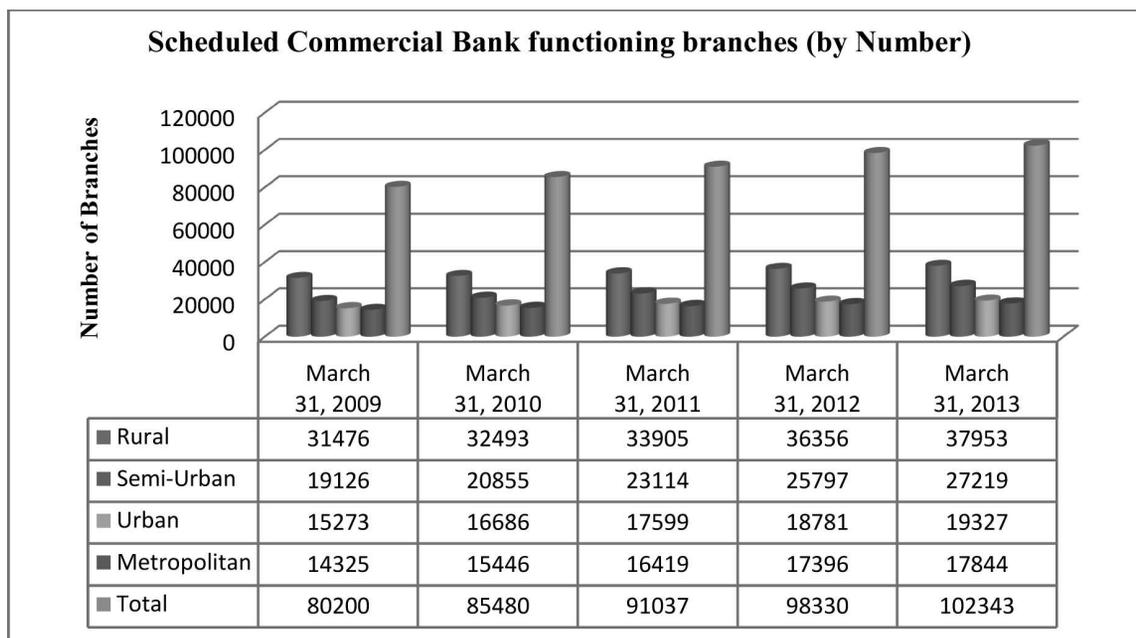


### 2. Scenario of ATM network and branches of bank:

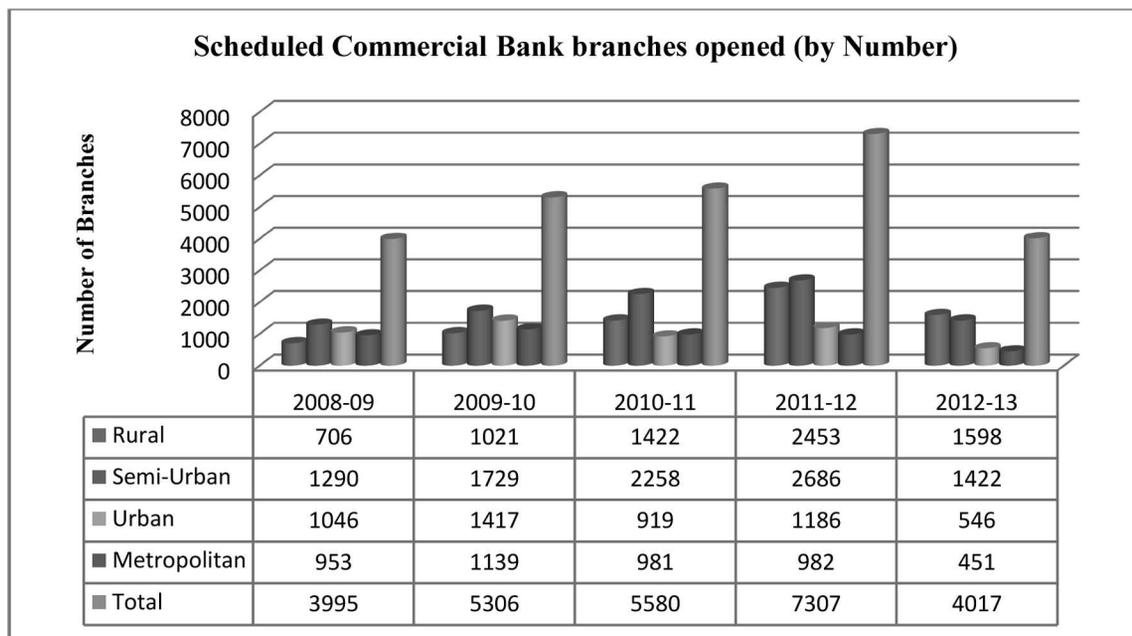
#### (I) Scheduled Commercial Banks Branches (by Number):



**(II) Scheduled Commercial Bank functioning branches (by Number) from 2009-2013:**



**(III) Scheduled Commercial Bank branches opened (by Number) from 2008-09 to 2012-13:**

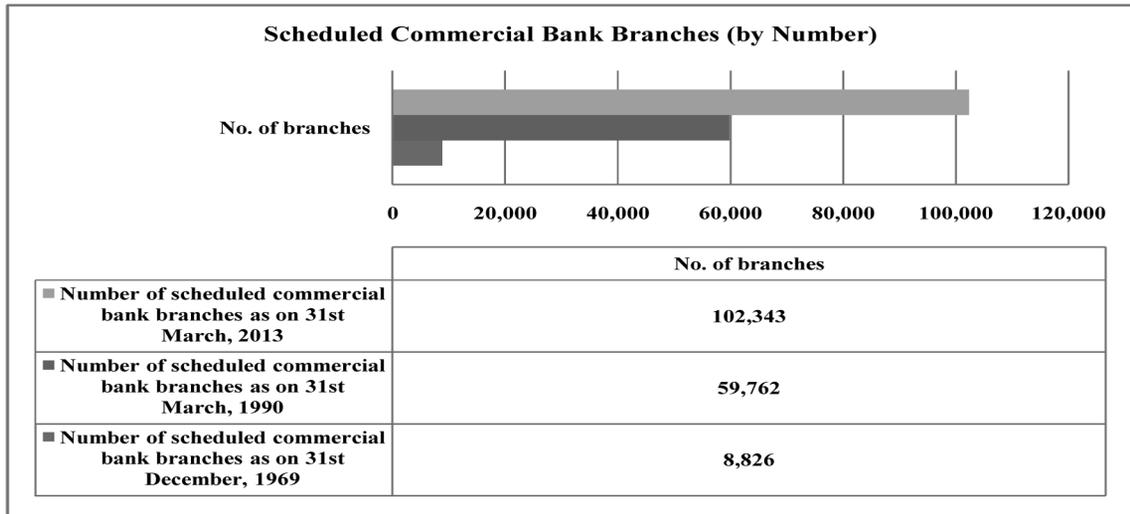


**(IV) No. of villages and Average Population (Customer) & rural population (by Number) per bank branch as on 2013:**

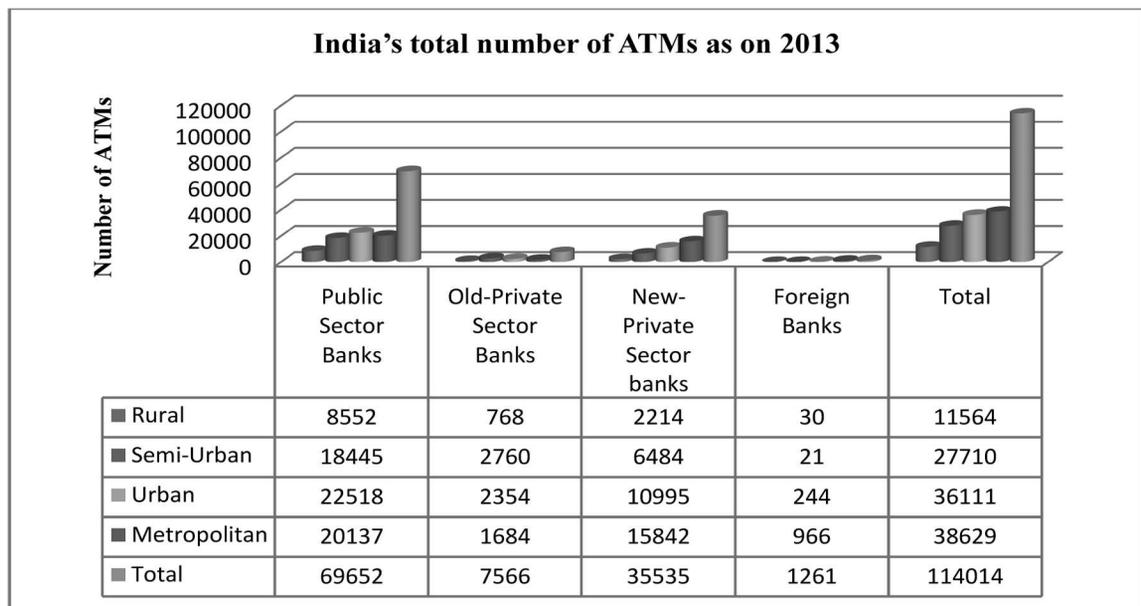
Number of rural population in India as per the 2001 Census 600,000 (approx.)

Average population per Bank Branch as on 2013 12,100

**(V) Scheduled Commercial Bank Branches (by Number) in the years 1969, 1990 & 2013:**



**(VI) India's total number of ATMs as on 2013:**



**Expansion of Banking Infrastructure:** As per the Census 2011, 58.7% households are availing banking services in the country. There are 102,343 branches of Scheduled Commercial Banks (SCBs) in the country, out of which 37,953 (37%) bank branches are in the rural areas and 27,219 (26%) in semi-urban areas, constituting 63 per cent of the total numbers of branches in semi-urban and rural areas of the country. However, a significant proportion of the households, especially in the rural areas, are still outside the formal fold of the banking system. To extend the reach of banking to those outside the formal banking system, Government and the Reserve Bank of India are taking various initiatives from time to time some of which are enumerated below:-

**(a) Opening of Bank Branches:** Government had issued detailed strategy and guidelines on Financial Inclusion in October 2011, advising banks to open branches in all habitations of 5,000 or more population in under-banked districts and 10,000 or more population in other districts. Out of 3,925 such identified villages / habitations, branches have been opened in 3,402 villages/ habitations (including 2,121 Ultra Small Branches) by end of April, 2013.

**(b) Each household to have at least one bank account:** Banks have been advised to ensure service area bank in rural areas and banks assigned the responsibility in specific wards in urban area to ensure that every household has at least one bank account.

**(c) Business Correspondent (BC) Model:** With the objective of ensuring greater financial inclusion and increasing the outreach of the banking sector, banks were permitted by the RBI in 2006 to use the services of intermediaries in providing financial and banking services through the use of Business Facilitators (BFs) and Business Correspondents (BCs).

Business Correspondents are retail agents engaged by banks for providing banking services at locations other than a bank branch/ATM. BCs and the BC Agents (BCAs) represent the bank concerned and enable a bank to expand its outreach and offer limited range of banking services at low cost, particularly where setting up a brick and mortar branch is not viable. BCs as agents of the banks, thus, are an integral part of the business strategy for achieving greater financial inclusion.

Banks had been permitted to engage individuals/ entities as BC like retired bank employees, retired teachers, retired government employees, ex-servicemen, individual owners of kirana / medical / fair price shops, individual Public Call Office (PCO) operators, agents of Small Savings Schemes of Government of India/ Insurance Companies etc. Further, since September 2010, RBI had permitted banks to engage “for profit” companies registered under the Indian Companies Act, 1956, excluding Non Banking Financial Companies (NBFCs), as BCs in addition to the individuals/entities permitted earlier. According to the data maintained by RBI, as in December, 2012, there were over 1,52,000 BCs deployed by

Banks. During 2012-13, over 18.38 crore transactions valued at Rs.16533 crore had been undertaken by BCs till December 2012.

**(d) Swabhimaan Campaign:** Under “Swabhimaan” - the Financial Inclusion Campaign launched in February 2011, Banks had provided banking facilities by March, 2012 to over 74,000 habitations having population in excess of 2000 using various models and technologies including branchless banking through Business Correspondents Agents (BCAs). Further, in terms of Finance Minister’s Budget Speech 2012-13, the “Swabhimaan” campaign has been extended to habitations with population of more than 1000 in North Eastern and hilly States and to habitations which have crossed population of 1600 as per census 2001. About 40,000 such habitations have been identified to be covered under the extended “Swabhimaan” campaign.

**(e) Setting up of Ultra Small Branches (USBs):** Considering the need for close supervision and mentoring of the Business Correspondent Agents (BCAs) by the respective banks and to ensure that a range of banking services are available to the residents of such villages, Ultra Small Branches (USBs) are being set up in all villages covered through BCAs under Financial Inclusion.

A USB would comprise of a small area of 100-200 sq. feet where the officer designated by the bank would be available with a lap-top on pre-determined days. While the cash services would be offered by the BCAs, the bank officer would offer other services, undertake field verification and follow up the banking transactions. The periodicity and duration of visits can be progressively enhanced depending upon business potential in the area. A total of over 50,000 USBs have been set up in the country by March, 2013.

**(f) Banking Facilities in Unbanked Blocks:** All the 129 unbanked blocks (91 in North East States and 38 in other States) identified in the country in July 2009, had been provided with banking facilities by March 2012, either through Brick and Mortar Branch or Business Correspondents or Mobile van. As a next step it has been advised to cover all those blocks with BCA and Ultra Small Branch which have so far been covered by mobile van only.

**(g) USSD Based Mobile Banking:** The Department through National Payments Corporation of India (NPCI) worked upon a “Common USSD Platform” for all Banks and Telcos who wish to offer the facility of Mobile Banking using Unstructured Supplementary Service Data (USSD) based Mobile Banking. The Department helped NPCI to get a common USSD Code \*99# for all Telcos. More than 20 Banks have joined the National Uniform USSD Platform (NUUP) of NPCI and the product has been launched by NPCI with BSNL and MTNL. Other Telcos are likely to join in the near future.

USSD based Mobile Banking offers basic Banking facilities like Money Transfer, Bill Payments, Balance Enquiries; Merchant payments etc. on a simple GSM based Mobile phone, without the need to download application on a Phone as required at present in the IMPS based Mobile Banking.

**Steps taken by Reserve Bank of India (RBI):** To strengthen the Banking Infrastructure

(a) RBI has permitted domestic Scheduled Commercial Banks (excluding RRBs) to open branches in Tier 2 to Tier 6 Centres (with population up to 99,999 as per census 2001) without the need to take permission from RBI in each case, subject to reporting.

(b) RBI has also permitted SCBs (excluding RRBs) to open branches in rural, semi urban and urban centres in North Eastern States and Sikkim without having the need to take permission from RBI in each case, subject to reporting.

(c) Regional Rural Banks (RRBs) are also allowed to open branches in Tier 2 to Tier 6 centres (with population up to 99,999 as per Census 2001).

(d) Domestic SCBs have been advised that while preparing their Annual Branch Expansion Plan (ABEP), they should allocate at least 25% of the total number of branches proposed to be opened during the year in unbanked Tier 5 and Tier 6 centres i.e. (population up to 9999) centres which do not have a brick and mortar structure of any SCB for customer based banking transactions.

(e) RRBs have also been advised to allocate at least 25 percent of the total number of branches proposed to be opened during a year in unbanked rural (Tier 5 and Tier 6) Centres.

(f) New private sector banks are required to ensure that at least 25% of their total branches are in semi-urban and rural centres on an ongoing basis.

**Direct Benefit Transfer (DBT)** - The objective of DBT Scheme is to ensure that money under various developmental schemes reaches beneficiaries directly and without any delay. The scheme has been launched in the country from January, 2013 and has been rolled out in a phased manner, starting with 26 welfare schemes, in 43 districts. The scheme is now being extended to additional 78 districts and additional 3 schemes from 1<sup>st</sup> July, 2013 and would be extended to the entire country in a phased manner.

The Government has also started the transfer of cash subsidy for domestic LPG cylinders to Aadhaar linked bank accounts of the customers with effect from 1<sup>st</sup> June 2013, in 20 pilot districts. About 75 lakh beneficiaries would be benefitted in these districts.

Banks play a key role in implementation of DBT and this involves four important steps, viz.

- (i) Opening of accounts of all beneficiaries;
- (ii) Seeding of bank accounts with Aadhaar numbers and uploading on the NPCI mapper.
- (iii) Undertaking funds transfer using the National Automated Clearing House – Aadhaar Payment Bridge System (NACH-APBS).
- (iv) Strengthening of banking infrastructure to enable beneficiary to withdraw money.

Banks are ensuring that all beneficiaries have a bank account. All Public Sector Banks (PSBs) and RRBs have made provision for Aadhaar seeding in the CBS. All PSBs have also joined the Aadhaar Payment Bridge of National Payments Corporation of India (NPCI). Banks are also issuing debit cards to beneficiaries. Banks have also started action for strengthening banking infrastructure and providing business correspondents in areas, which were so far unserved.

Banks have also been advised to provide an onsite ATM in all the branches in identified districts and a Debit Card to all beneficiaries to enable him / her to withdraw the money as per his ease and convenience. Issuance of a Debit Card to all beneficiaries to enable him / her to withdraw the money as per his ease and convenience will also strengthen the withdrawal infrastructure.

**Expansion of ATM network:** Pursuant to Budget announcement 2013-14, Banks are required to ensure an onsite ATM in all the branches. Out of 34,668 onsite ATMs thus identified to be installed by Public Sector Banks, 1,097 ATMs have been installed by end of April, 2013.

#### **IV.Challenges**

But one observes that quite a large number of people are still excluded from the ambit of the formal banking system. This is suggestive of dependence on the village moneylenders, chit fund and ponzy schemes. The World Bank Index Survey of 2012 Report shows that only about 35% of Indian adults had access to formal bank accounts as against the global average of 50%. Further, only 4% Indians used a mobile phone in the last 12 months to pay bills or send or receive money. The RBI also laments that the accounts opened and the banking infrastructure created has not seen substantial operations during 2010-13. Thus the neediest are excluded while the banks' doors are open for the corporate. It is due to loan default of these so-called business magnates, banks are stubbornly harassed by the huge volume of Non-performing Assets. Indeed the banking industry faces variety of challenges. In brief, illiteracy of the masses, poor and irregular incomes, poverty, etc. Being illiterate, these people are also technologically excluded. Besides, poor people are incapable of making any financial judgement, even if they have some excess money. In addition,

the inadequacy of financial infrastructure, particularly in the rural areas is a strong inducement for the informal banking sector to keep its foot strong on the rural soil.

## **V.Conclusion**

The Reserve Bank of India, Government, NABARD and the agencies will have to put their minds and hearts together for achieving absolute financial inclusion. The financial inclusion will be in better position by this sound effort. So, our country needs proper financial inclusion regulation to reach our aim of complete financial inclusion. Social Help Groups and MFIs role should be enhance for access of financial service. Enhanced financial inclusion will have a significant impact on our economy. The main cause of farmers' suicides is farmers' indebtedness. Such will be considerably reduced through this enhanced financial inclusion. More rapid modernization of Indian agriculture will be another important benefit of this improved financial inclusion. New agriculture is capital intensive as it depends on improved seeds, fertilizers and other modern input and equipment. Since enhanced financial inclusion means better risk management tools for the farmers, they will be encouraged to adopt new technologies at a faster rate. This will also lead to a benefit of accelerate and equitable growth of our country. Financial inclusion is not a onetime effort; it is an ongoing process. It requires a major mindset change in the minds of every individual involved – banker, bureaucrat, regulator et al, and, therefore, creating awareness at all levels. At the same time, the role of technology in the whole scenario cannot be undermined either. It has to be admitted that today, more than even before, technology plays a vital role in bringing about integration in society of all social and economic classes.

As observed by Dr. Yunus, “.....basic ingredient of overcoming poverty is packed inside each poor person. All we need to do is to help this person to unleash this energy and creativity.... Only place in the world where poverty will exist will be in the museums and no longer in human society.” This can be possible through combined efforts of all the policy makers, regulators, banks, NGOs, MFIs and other similar entities.

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***Book Review*****Growth and Development : Emerging Issues, Edited by Dr. Prakrishna Pal, Regd Publications, New Delhi, 2014, Rs. 1650**

This book under review contains six major sections, namely Development Issues, Industrial Issues, Education and Employment Issues, Health Issues, Environmental Issues and Trade Related Issues. All these are important contemporary issues. The title of the book clearly indicates that it has considered both quantitative and qualitative aspects of economic development.

The Section I on “Development Issues” contains four articles on topics like Inclusive growth paradigm in India, Inequality and Polarisation in human development in India, Relation between population growth and economic growth with respect to few selected South Asian economics, and the role of Infrastructure and Private investment as new sources of regional divergence in India. These articles have focused mainly on the following issues : (i) the need for an inclusive growth paradigm on development policies through rapid economic growth generated from the productive use of inputs and growth of total factor productivity in an environment of judicious regulation of markets; (ii) Constructions of HDI of major states of India by following methods alternative to that used by the UNDP in order to study the nature of inequality and polarisation in human development on the basis of 11 socio-economic indicators; (iii) the wide divergence in the availability of facilities of infrastructure causing the divergence in the flow of in different states of India; and (iv) the observation of absence of any long run relationship between population growth and economic growth in four selected countries of South Asia, such as India, Bangladesh, Pakistan and Sri Lanka during the period 1960-2007.

The section II contains three articles on the topics like (i) Technical efficiency of Indian food products industry; (ii) consumption of horticultural product and income level; and (iii) Examining location. The first article considered evidence from a stochastic frontier approach and it reached the conclusion through regression results that food products industry is conducive to labour intensive production process and the smaller sized farms are found to be relatively more efficient. The second article has examined the change in the per capita per month consumption expenditure for fresh and processed fruits and vegetables and its relation with per capita income level in major states of India and at the All India Level during the period 1993-94 to 2003-04. The third article examined the factors responsible for location of the Gold and Jewellery sector.

The section III contains four articles. The first article has considered the status of the system of primary education in India. It is a district level study based on DSE data. It was observed that the system is seriously hampered by lack of resources required to boost up a

decent standard. The second article compared the domestic rate of return on capital with that of return on international capital market and it is observed that these may arise a case of complete polarization of sectors using skilled labour and unskilled labour as a result of inflow of foreign capital in the economy of account of globalization. The third article is on unemployment problem in West Bengal and its future development prospects. This article has analyzed the nature and magnitude of the unemployment problem in West Bengal. The authors have observed the problem of educated unemployment with special emphasis. It is observed that the scope of fresh employment in government enterprises has been almost limited at present and it is a matter of grave concern with anxiety that employment opportunities in all the sectors have also become limited in the same manner. The brain drain from the state of West Bengal is a severe problem and it has also been observed that the future development prospects of the state along with creation of new employment opportunities have reached a state of virtual closure. The fourth article has tried to examine whether gender bias in child care can be cured through educating people.

In section IV, there are four articles. The first article has examined an overlapping generation model by considering the depreciation of health and the health-poverty trap. It is concluded that government intervention in the form of massive investment in the health sector is required to keep the prevalence of mortality and morbidity below the threshold limit, and to lead the economy out of the low income equilibrium trap. The second article is on Reproductive and child health status in West Bengal. The district wise study in this context, based on official statistics, has shown a common positive trend in inequality in deprivation in health implying increasing regional imbalance over time. The third article has considered the 'Health System performance in West Bengal, based on efficiency estimates across the districts. It has been observed that there has occurred a lopsided development of the health sector. Moreover, the management of resources should be better. The fourth article has considered a review of the PP initiative in health in West Bengal.

In section V, the first article is on Consumption Expenditure patterns and climate change in India - Implications for policy. It is observed that the change in climate has indeed affected the pattern of consumption expenditure. The author has identified there factors that help to keep down the impact of the consumption behavior of an average Indian consumer on global warming. The second article has considered the Green index and the paradoxical realities. It has been concluded that India still has miles to go to achieve sustainable development. The third article has considered the nature and origin of health hazards in the country and socio-economic position. The care of few thermal power plants in West Bengal has been studied in this context. The fourth article has considered the aspect of transport problems in urban India with respect to congested cities and slow transit.

The section VI has considered trade related issues. The first article has considered the decomposition of growth of foreign trade in Sri Lanka in terms of value, Quantity and price. The second article has considered the dependence of India's export on manufacture. This analysis has been based on input-output framework.

On the whole, this is an informative book, containing important information that can be used by researchers for future studies.

**Dr. Biswajit Guha**  
**Former President,**  
**Bangiya Arthaniti Parishad**

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