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LIFE AND WORKS OF P.R.BRAHMANANDA- A REVIEW

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Chapter - 2

LIFE AND WORKS OF P.R.BRAHMANANDA- A REVIEW

2.1. Introduction

Fortunately, India nurtured many great men who did a lot for the country in different spheres. One such celebrity who could be considered a legend in the economic history of India is P.R.Brahmananda, an eminent Indian economist of the world order and repute.

2.1.1. Background

Palahalli Ramaiah Brahmananda was born on Sep.27th, 1926 at Bangalore as the eldest son of P.R. Ramaiya and P.R. Jayalakshamma. P.R. Ramaiya, a freedom fighter, was the founder editor of Kannada daily 'Tainadu' and 'Daily News' in English and Jayalakshamma was the Deputy Mayor, who brought up their son with a Swadeshi Spirit. From the early days, Brahmananda had been inculcated with the spirits of patriotism by the studies of the biographies of the nationalist leaders like Balagangadhara Tilak, Mahatma Gandhi, Jawarlal Nehru, Bankim Chandra Chettarji and Rabindranath Tagore. He was greatly influenced by his senior uncles, especially, R.S. Narayan who had deep nationalistic urges and the great scientist Sir C.V. Raman, who was his maternal kin. Raj Kumar Sen, in his Festschrift in honour of P.R. Brahmananda, has proudly said, "Dr. Brahmananda is considered to be a fatherly figure in the fraternity of Indian economists and needs no introduction".  

2.2. An Academic Profile of P.R. Brahmananda

P.R. Brahmananda completed his Intermediate in Bangalore and continued further studies at Maharaja’s College in Mysore, where he studied B.A. Honours in Economics during 1943-44 to 1945-46. In the Honours Course in the University of Mysore, the students had to study eight Papers for the major examination in Economics at the end of third year. Apart from this, during the first two years, two Papers in Indian Economics, one Paper in Indian History, one in English were to be studied and Brahmananda opted Sanskrit for the Paper in Indian Language.

After completing his Honours Course, Brahmananda took interest in pursuing studies in Economics further and was impressed by the popularity of the Bombay School of Economics, and did his M.A. in Economics at the Bombay University. He obtained Doctorate from the University of Bombay for his Ph.D., Dissertation on 'The Economics Of Welfare Maximisation', under the Supervision of D.T. Lakdawala in 1953.

It would be noteworthy to mention some of his tutors who had had an immense influence on Brahmananda during his academics. S.L. Rama Rao, who taught Brahmananda Principles of Economics, Industrial Economics and Portions of Money, according to a profile by Raj Kumar Sen, was a good teacher. Others like Tirumalachar, M.H. Gopal and S.L.N. Simha taught him Topics on Ricardo, Public finance, and Paper on Money, respectively and D'souza, another teacher of him, used to ask the students to study and summarise selected journal Articles and Books;


3. Bombay then was considered a city of great opportunities and it was the leader in opinion formation. At the Bombay School of Economics, C.N. Vakil used to inspire the students to carry out theoretical works and researches in context of Indian Economy.
M.H. Gopal in Economics, M.H. Krishna in History and M.V. Krishna Rao in Political Science were the three teachers in social science who were engaged in Teaching and Research as well. Brahmananda studied Papers in History and Political Science in his Honours Course which later helped him a great deal to understand the interconnections among different disciplines. While referring to Brahmananda's opinion about his teachers, Raj Kumar Sen states, “his teachers in Economics unconsciously outlined the essentials of at least three or four schools of thought. Rao emphasized the Jeavons-Hayek Tradition, Tirumalachar introduced the ratified world of Ricardian Economics, D'Souza made the students conscious of the greatness of Cambridge Economics, especially of Marshall and his disciples.” By then, Brahmananda began to ponder as to how the ideas of these western economists were relevant from the Indian standpoint.

2.2.1. Academic Positions of P.R. Brahmananda

Brahmananda held various positions at the University of Bombay for nearly four decades. He joined the Department at the University of Bombay as a Research Assistant to C.N. Vakil in 1949. Later in 1954, he became Lecturer, Reader in 1956, RBI Endowment Reader in Monetary Economics in 1957, RBI Endowment Professor of Monetary Economics in 1962, Director of the Bombay School of Economics in 1976 and got superannuated in the year 1986.

Brahmananda served as Visiting Professor at the Delhi School of Economics during 1985–86, UGC National Fellow during 1978–81, ICSSR National Fellow during 1987-89. He also served as Honourary Visiting Fellow at the Institute for Social and Economic Change, Bangalore and as Honourary Professor at the Indian Statistical Institute, Bangalore.

Brahmananda was appointed the President of the International Economic Association at its 13th World congress held at Lisbon in Sep. 2002. He was only the Fourth Indian to be made the Honourary President of IEA. He played an incredible vital role in building the Indian Economic Association from 1960s and also served as the Editor of the prestigious Indian Economic Journal and was continuously elected as its Managing Editor. In the words of D.M. Nachane, "If the Journal has managed to study afloat for the last 50 years and maintained its own place, in the face of rapid advancements in the Subject, it is largely owing to PRB's organizational skills and unerring editorial acumen." It was he who took a leading role in making the Indian Economic Association a leading professional body of Economics in India and therefore Biswajit Chatterjee considered him to be one of the main pillars of the Indian Economic Association. He presided over the Diamond Jubilee Meetings of the Indian Economic Association in 1976 and was also the President of the Society of Labour Economics.

Brahmananda was a Teacher throughout his career. As an excellent and a devoted teacher, he produced a number of students some of whom are distinguished Indian economists namely, Krishna Bharadwaj, Bimal Jalan and Lord Meghnad Desai. He guided over forty students for their Doctoral Research including Bimal Jalan, the former Governor of the Reserve Bank of India.

5. International Economic Association is the Professional body of all Economic Associations in the world.

6. Among the Indians who received this honour earlier include C.N. Vakil, Sukhomoy Chakravarthy and Amartya Sen.


After his retirement, he settled down in Bangalore and took interest in framing opinion regarding economic policies with respect to Karnataka and other States of the country.

2.3. Researches of P.R. Brahmananda - An Epitome

This part is dealt with entirely on the basis of two Fest-schriften in honour of P.R. Brahmananda and other articles on Brahmananda by eminent scholars.⁹

P.R. Brahmananda made innumerable contributions to the world of Economic literature. He had been writing constantly till his death. Awasthi, the former Secretary and Treasurer, IEA, opined that Brahmananda had touched almost all the branches of Economics.¹⁰ D.M. Nachane and Kalyankar write that Brahmananda’s Researches encompass three major areas, “firstly the different aspects of general economic theory have been attempted to be restated in the process of modernization of the classical economics. Secondly, from the early fifties itself, he has pioneered studies in the subject of development economics in the light of the economic history and experience in a large developing economy like India, and thirdly, the working of the Indian economy, specially in its planning, monetary, fiscal and international aspects”.¹¹

Brahmananda began his research activities from 1946 as a Research Student at the Bombay School of Economics, the Bombay

(b) Sen Raj Kumar & Chatterjee Biswajit (eds.) (2003), op. cit.
University. He collaborated with C.N. Vakil in the preparation of 'The Economic Consequences of Divided India' in 1949 and of the volume, 'Teaching of Economics in India'. Even before the mid-fifties, he had written several Research Papers on the theoretical problems of development of less developed countries. Brahmananda was deeply interested in the general theory of development. When, in 1960, Pierro Sraffa's book, 'Production of Commodities by Means of Commodities', was published, Brahmananda attempted at analyzing its implications and wrote a series of Articles. S.R. Kasbekar and Sachchidananda Shukla observe in 'Economic Consequences of India', that the works of Brahmananda refer to the names of old masters like Fredrick List, Joseph A. Schumpeter, A.C. Pigou, Pierro Sraffa and Kenneth Arrow.

Brahmananda's quest for Monetary Economics began from mid-60s. About his Volume, 'Money, Income and Prices in the 19th Century India', C. Rangarajan says, 'there are hardly a few countries in the world which have a comprehensive account of the monetary histories of their countries. I am glad and proud that this gap is being filled for India'. While praising Brahmananda's work titled, 'Nobel Economics', K.Thiagarajan writes, "his Magnum opus on 'Nobel Economics: A Historical Commentary from the Classical Angle', does not only reflect his steadfast faith in monetarism, brilliance, range and perspicacity of his dedicated labours, but also recognized the contours of planning not as mere mathematical modeling but more as a device to enforce discipline on the Central and State

12. Chapters III, V, VIII & IX are written by Brahmananda along with C.N. Vakil in 'Economic Consequences of India'.
governments in their shaping policies for decision making process”.\(^\text{15}\) Nachane expressed on the same with these words, “by any reckoning, this is a formidable work of the highest erudition”.\(^\text{16}\) When there was a running inflation of 20 per cent, Brahmananda along with C.N Vakil, formulated an anti-inflationary plan in 1974, known as ‘SEMIBOMBLA’ to solve the problem of inflation.\(^\text{17}\) Brahmananda always used to think of monetary and fiscal policies, their implications and consequences.

It was during the mid-sixties that Brahmananda inclined towards international monetary matters and presented a classical work on international liquidity in 1968.

Brahmananda used to question as to how the western theories were relevant in the Indian context. He aimed at working out our own system of economic analysis more relevant to our problems, and finally advented, along with Vakil, the ‘Wage-Goods Model’ in ‘Planning for an Expanding Economy’, one of his splendid works.

Brahmananda wanted to blend economic theory and empirical facts with econometric methods. However, according to T. Krishna Kumar, he was handicapped by the lack of mathematical and statistical knowledge when compared with other contemporary economists. Nevertheless, some of his works contain high doses of mathematics and econometrics. He was often invited by the press to comment on budgets and major economic policies. His writings on the above said aspects are manifold.

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\(^{16}\) Nachane M. Dilip (2003-04). op.cit. p.36

\(^{17}\) SEMIBOMBLA stands for Scheme of the Economists for Monetary Immobilisation through Bond Medallions and Blocked Assets, and was submitted to the Prime Minister of India on 14-05-1974, which aimed at withdrawing a part of the money circulation through floating bonds. - ‘Brahmananda - An Authority on Economics’, The Hindu, 24\(^{th}\) Jan. 2003.
Brahmananda had an awesome figure of 801 writings to his credit, of which 36 are books. He had been thinking of the working of the Indian economy throughout his lifetime. To quote his own words, "I belong to a poor country, but I am not ashamed of belonging to my country. I do believe that fundamental work can be done in countries like India, whether the western world recognizes it or not. We have to build the frame of reference from within. We are too large a country and our history is also old and it has many brilliant patches. We can't afford to have our reference being determined and adjudged by economists in foreign and rich countries."\(^\text{18}\)

2.4. P.R. Brahmananda - A Unique Personality

P.R. Brahmananda, a man of distinction, gave splendid contributions to the world of knowledge in general and of economic literature in particular. He was the soul of dedication, devotion and determination. He was one of the very few economists produced in Karnataka who had both national and international reputation. He has been sketched beautifully by his admirers. He was loyal to the subject which he opted and to his teachers, friends, colleagues and students. He was bold enough to denounce the government policies, which he found to be inappropriate, specially those economic reforms that were hurting the poor to a large extent. To quote Y.V. Reddy, the Governor of the RBI, "Brahmananda was a sage, enriched with some original thoughts and a man of honesty and integrity with free and frank opinion on policy matters."\(^\text{19}\)

\(^\text{18}\) Chatterjee Biswajit (2003). \textit{op.cit.}, p. 43.

\(^\text{19}\) P.R. Brahmananda Memorial Lecture, Welcome Address by Y.V. Reddy, Governor of the RBI, 20\textsuperscript{th} Sep. 2004.
In the words of D.M. Nachane, “he was truly a versatile spirit which ranged over virtually all areas of economics with an almost promiscuous abandon. In his scholarship, dedication, humility and unbounded affection for his students and friends, he can only be compared to the grand old sage of yore ‘Vasista Muni’.”

P.R. Brahmananda, the saga of Indian economic history, unfortunately left to the eternal abode on January 23rd, 2003, at the age of 76 following a cardiac arrest. Many scholars did lament at the death of P.R. Brahmananda, a bachelor. To quote Venkatasubramannian, “P.R. Brahmananda’s demise is a great loss to India and the world of economics. His monumental studies on welfare economics were a milestone in economic thought.” To S.S. Tarapore, Brahmananda’s demise is an irreparable loss to the poor. Nachane expressed, “In those first few moments of shock and grief, my thoughts turned not to his numerous books and articles but to more poignant personal memories of PRB, ‘the man’. His was a warm, affectionate and generous nature”.

Thus, though Brahmananda disappeared, his remarkable deeds make his name linger in our memory forever.

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21. Though he was a bachelor, his admirers say that Brahmananda was so devoted to economics that in the profession it was quipped that he was ‘married to economics’. 
2.5. A Review of Writings of P.R. Brahmananda on Planning and Development

As stated above, Brahmananda's literature persists in almost all the branches of economics and a review of his vast literature could hardly be endeavoured. Hence, to be more exhaustive, the Researcher, in the present Chapter, restricts herself at reviewing the works of Brahmananda pertaining to Planning and Development.

2.5.1. A Brief Review of Volumes

There are about six volumes of Brahmananda on Planning and Development, the central themes of which are presented in this portion.

'Planning For A Shortage Economy', a popular work of Brahmananda, with C.N. Vakil, was published in 1952. It is comprised of twenty-two chapters all of which are concerned with planning and its implementation. A brief note on the early efforts at Planning in India has been presented. The Bombay Plan and the Colombo Plan are briefly dealt with and the Colombo Plan has been compared with the Five Year Plan. The authors examined the problems related to the rate of investment, and the financial aspects of the Five Year Plan. The problem of consistency in real terms was considered and the need for collection of comprehensive statistical data regarding all aspects of economic activities was highlighted. The authors also discussed on the issues relating to the redistribution measures, importance of austerity programmes and social justice. They pointed out in the book that the lack of consistent system of priorities among the government programmes was one of the main drawbacks in the development efforts in India and highlighted the need for introducing complementarity and consistency in the priorities of the Plan. Pattern of
outlay of the Plan was criticized and the targets set by the Commission for different spheres were also analysed by the authors. The significance of price policy, food problem and fundamental principles in determining food policy were examined and certain measures were outlined to solve food problem in India. They recognized mass poverty as the greatest problem of our country. They also emphasised on paying attention towards controlling the rising population growth rate. It was also argued in the book that income and employment growth rates were constrained by acute shortages of food grains and other key commodities. The authors observed that the major constraint in utilizing surplus labour in projects was inadequate supply of marketable surplus.

'Planning For An Expanding Economy', published in 1956, is one of the classic works in which Brahmananda and Vakil have put forth an excellent alternative development strategy to Indian planning with an emphasis on the development of agriculture and agriculture-related industrial activities connected with the production of wage-goods, in contrast with the Heavy Industry Strategy of Development of P.C. Mahalonobis during the Second Plan. This Volume consists of fifteen chapters in total, being divided into two parts. Eight chapters constitute the First Part. It offers a detailed critique of India's Second Five Year Plan where the projections and assumptions of the Plan are examined in detail. The authors examined, analysed and evaluated the objectives, methodology, income and investment targets, the problem of financial resources, employment policy and targets, the investment pattern of the Second Plan and proved the structure of the Plan to be non-optimal.

Seven chapters constitute the Second Part of this Volume. This Part outlines the details of the Wage-Goods Strategy as an alternative development Model, emphasizing on agriculture and agricultural related
commodities. The concept of Wage-Goods Gap is explained and this gap is identified as the major cause of unemployment and mass poverty. It was therefore suggested to change the pattern of investment with priority attention towards investment in agriculture and in the related wage-goods to attain larger employment in each short-period. The concept of consumption multiplier has been introduced which shows by how much investment and employment would go up as a result of a given increase in the supply of wage-goods. Excess population size and its growth rate are looked as curbs on the multiplier process. In the concluding chapter, Vakil and Brahmananda have explained their Three Stage Programme. It is suggested that in the First Stage of Planning, the rate of investment should be raised through forced and voluntary savings and a major proportion of new investments should go to the wage-goods sector. In the Second Stage of Planning, emphasis should be on the development of capital-goods sector catering to the requirements of consumer-goods sector. And in the Third Stage of Planning, various luxury-goods industries should be developed and a quick rate of expansion in the standard of living of the labour-force should be initiated in the economy. In total, this Volume outlines a preliminary framework of the Wage-Goods Strategy.

'Planning For A Futureless Economy', one of the brilliant works of P.R. Brahmananda, published in 1978, presents a critique on the 6th Plan and its Development Strategy. This Volume contains twenty-two chapters followed by an Appendix and Glossary of selected terms. Brahmananda has posed various questions in regard to the output growth rate, supplies of essential consumption goods, employability-state in the economy, distribution of real income and of consumption, price stability and planning methodology in the light of the Indian Five-Year Plans and has given a critical appraisal of the achievements and failures in our Planning experience. Our Planning experience has been compared with that of
other countries like China and Russia. Brahmananda presented an outline of the Draft Sixth Five-Year Plan wherein its primary and supplementary objectives, allocation propositions, production targets were all discussed. He referred to the requirement of five sorts of balances in every Plan Document such as commodity balance, financial resources balance, savings-investment balance, foreign exchange balance and the employment and man power balance. He criticized the New Approach to employment by the Planning Commission as the weakest portion of the entire Document and examined the pitfalls of the concept of labour-intensity on which the New Plan was depended. The Indian Plan Models and Model Variants of the First Plan, the Mahalanobis Strategy, the Wage-Goods Model, and the Strategy adopted in the Third, Fourth, and the Fifth Plans have also been evaluated. An account of four Sub-Models of the Model Variant IV encased in the Sixth Plan is also given. Brahmananda tested the hypotheses of the Commission empirically with econometric techniques and the results were shown therein. He listed fourteen hurdles in the way of the New Plan for delivering the promised goals. He stated the errors in the measures adopted by the Planning Commission to overcome acute poverty, and also criticized the procedure adopted for the choice of public goods, their supply and indicated the financial infeasibility of the Plan, built-in inflationary component of the Plan and the non-optimal investment pattern of the Plan. A 15-Point Strategy called HOPERASHMI was put forth in the book to tackle the problem of population.25

Having examined the Planning Commission's New Strategy from almost every angle as stated above, Brahmananda offered a brief account of the Extended Wage-Goods Strategy of Development, its components and the technical issues associated with this alternative strategy.

25. HOPERASHMI, the phrase used by Brahmananda, is a mixture of an English and an Indian word, meaning 'Ray of Hope'.
Chapter 2

Life and Works of P.R. Brahmananda - A Review

It has been summed up with a suggestion to adopt the Wage-Goods Strategy for 'Prospect of a Future for the Ancient Land and its Teeming Young'.

In his magnificent work, entitled, 'Planning For A Wage-Goods Economy', published in 1995, Brahmananda has put forth an Integrated Approach to development economics in the form of the Wage-Goods Strategy, Model and Paradigm with a further development of the ideas and views enunciated earlier with C.N Vakil during the Second Plan. This Volume consists of ten chapters and five appendices. In chapter I, a comparative note of three different development strategies, such as, the Fully Market determinants or the laissez-faire, the Heavy Industry Strategy and the Wage-Goods Strategy has been presented, wherein the Wage-Goods Model is argued to be the best development strategy for the developing economies like India. A New National System of Political Economy has been outlined to implement this Strategy. In the Appendix to this chapter, analytical features of the Wage-Goods Paradigm are depicted. Chapter II identifies the real national income, the volume of employment, the level of prices, and the growth rate as the crucial independent variables in Macro Economic Models. It also analyses the features of three Macro Model types, that is, the Classical, Keynesian, and the Wage-Goods Model. In chapter III, the Mathematical or the Formal Equations of the Wage-Goods Model are given as adjusted for India with the five blocks like Output Block, Employment Block, Price Level Block, Savings Block and the Growth Block. Five Propositions of the Wage-Goods Model are also depicted therein. In chapter IV, the Wage-Goods Macro- econometric Model is explained by dividing the economy into five blocks as in the previous chapter and each block is tested empirically and the findings are revealed. Chapter V discusses some crucial relations,
ratios and rates. The relations between income and consumption, income and employment multipliers are examined and the broad factors determining the consumption-income multiplier have also been examined. The effects of labour-productivity in the wage-goods sectors and non-wage-goods sectors on consumption multiplier are examined. The wage-goods elasticity of income is examined and the demand elasticities for different categories of wage-goods have also been computed. In Chapter VI, Brahmananda provides the illustrative projections of the Wage-Goods Model for the period from 1990-92 to 2000-01. In chapter VII, he defines the mechanism of the Model, its welfare implications, and justifies the adoption of the Model on the grounds of welfare of vast masses. In chapter VIII, seven goals of the Perspective Planning have been listed. Three constraints have also been identified in this regard such as, the foreign exchange constraint, the savings constraint, the wage-goods constraint and basic need-oriented collective goods and services constraint, and remedy is suggested to overcome these constraints. Chapter IX presents a picture of the economy during the eighties and early nineties. In the concluding chapter of this Volume, Brahmananda places a plea for a mixed economic system with the Wage-Goods Model as the core and a Market economy outside of the core.

'Employment Policy In A Developing Country', edited by P.R. Brahmananda, jointly with Austin Robinson and L.K. Deshpande, was published in 1983 in Two Volumes.

First Part of Volume I includes one article of P.R. Brahmananda titled, 'The Dimensions of the Problems of Unemployment in India', in which he talks on the problems of unemployment in India. In this Paper, he differentiates between the notions of employment and unemployment in western economies and in underdeveloped countries and points out that
there are grave difficulties in the transfer of western notion of employment and unemployment to the conditions existing in countries like India. He mentions the types of unemployment in India as distinguished in the National Sample Surveys, such as,

1. Visible chronic unemployment: those belonging to the labour force who are willing to work but are not able to get employment at any time throughout the reference year.
2. Weekly-Status unemployment: those members of the labour force who have not worked even for a specified fraction of a day in the reference week.
3. Daily-Status unemployment: includes those who have not worked even for a specified fraction of a period on the reference day.
4. Seasonal employment on a weekly or daily-status basis: for this purpose the year is divided into four seasons-July-September, October-December, January-March, and April-June.
5. The rate of unemployment: for this purpose the ratio of the unemployed on a daily-status basis to the weekly-status labour force is expressed as a ratio of the unemployment on a weekly-status basis.

Brahmananda observed that unemployment on a weekly-activity basis was chronic in Kerala, Tamil Nadu, West Bengal and Andhra Pradesh, on a daily-activity basis, it was chronic in Kerala, Tamil Nadu.

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26. In western economies, employment offered to a worker is continuous for the duration of the job and the duration is normally long and the income offered will be sufficient to provide for the worker fully for that period, with reasonable intensity of effort. In such countries the available labour is scarce in relation to the potential opportunities of employment. Seasonal unemployment is not an acute problem there nor are available jobs predominantly part-time.

West Bengal, Andhra Pradesh, and Karnataka. The underemployment rate was chronic in Kerala, Tamil Nadu, West Bengal and Andhra Pradesh. The States where there were low unemployment and underemployment rates include, Assam, Uttar Pradesh, Madhya Pradesh, Rajasthan and Himachal Pradesh. Then, on the basis of the National Social Survey data, Brahmananda had drawn some conclusions, that the employment scene was characterized by a wide extent of intermittent nature of work, specially in rural areas, and that both unemployment and underemployment were acute among small cultivators and agricultural labourers. It was also found that the weekly and daily-status survey-unemployment situation was very acute in Kerala, Tamil Nadu, Andhra Pradesh and West Bengal which had high population density. States like Andhra Pradesh, Orissa and West Bengal had acute seasonal unemployment.

In the Second Volume of ‘Employment Policy in a Developing Economy’, two Papers of Brahmananda are incorporated in the Seventh and the Tenth Part of the Volume, entitled ‘Unemployment and Poverty: Is There a Conflict Between Policies to Tackle the Two?’ and ‘Aspects of Academic Thinking in India on Employment and Related Policies’, respectively.

In his article, ‘Unemployment and Poverty: Is There a Conflict Between Policies to Tackle the Two?’, Brahmananda outlines the economic policies to attain the twin goals of poverty eradication and employment expansion. Brahmananda observes significant correlations between the unemployment ratio and poverty ratio, rural daily-status unemployment and rural poverty, rural underemployment ratio and rural daily-status unemployment ratio and between seasonal unemployment and rural poverty. He examines the correlations between the unemployment ratio and a number of economic magnitudes like population density,
poverty ratio, value of output per hectare, proportion of sown area to total area, per capita state income etc. On this basis, he brings in broad generalizations that where population density is high, the unemployment ratio is also high; where the proportion of agricultural labour is high, the unemployment ratio is also high; where the unemployment ratio is high, the poverty ratio too is high; where the value of output per hectare is high, population density too is high; so is the case where the proportion of sown area is also high. Then his empirical results reveal that the wage-paid unemployed is positively and highly significantly related to the aggregate supplies of wage-goods and negatively and significantly related to the real wage rate, and that the wage-goods supplies alone is statistically significant when wage-paid employment is regressed over wage-goods supplies and the output of heavy industry. The results also establish a highly statistically significant and positive relation between wage-goods supplies and population, an inverse relation between the rate of profit and the share of wages, and finally Brahmananda’s results show that Real National Income is statistically significantly accounted by capital stock and wage-goods supply.

Brahmananda examines whether or not there exists any relation between employment and poverty, and if a relation exists, then what policies are to be adopted to attain the goals of poverty eradication and employment expansion. He then has defined the economic meaning of the empirical results he obtained so far as poverty of the weaker classes is concerned. There exists an inverse relationship between daily-status rural unemployment and per capita consumption of the economically weaker classes, a positive relation between productivity per agricultural labour and per capita consumption of the weaker classes and that poverty is especially acute among the scheduled castes and tribes, and there exists
a negative relation between density of population and average consumption. He opines that the employment goal should be such as to devise measures to afford more employment to the members of below poverty line to achieve poverty eradication and employment expansion goals. Then he lists out the components of a macro-poverty eradication programme such as, transfer of goods and assets from the better-to-do groups to the poor, a reduction in the population growth rate with a possibly higher extent of reduction among the poorer groups, an improvement in the average number of earners per household with a bias in favour of the poorer households, an improvement in the productivity of the assets in general, outward emigration of labour in general, specially from the poorer households, an improvement in the purchasing power of money, a reduction in the proportion of unproductive expenditure particularly among poorer households, an increase in the aggregate stock of capital, policies to make the output process more certain and less amenable to upsets due to natural calamities, and finally, technological changes.

In his another Paper, 'Aspects of Academic Thinking in India on Employment and Related Policies', Brahmananda brings in the merits of the Wage-Goods Approach over the western theoretical strands and different approaches in India. He discusses three different theoretical strands like the Classical, the Neo-Classical, and the Keynesian and argues that they are not relevant in the Indian context. He identified the 'Wage-Goods Gap', that is, an inadequacy in the capacity to produce wage-goods in relation to the potential requirement for larger employment, as the major cause for why larger employment was not achieved in India. He suggested, in the Indian context, to change the pattern of investment and composition of capital in order to increase the capacity to produce
wage-goods. He held that the wage-rates and consumption levels of certain portion of the economy were higher than could be socially justified and therefore recommended for a policy to transfer wage-goods from higher income groups to lower income groups through expansion in employment. Then Brahmananda referred to a school of thought in India which had maintained that the allocation of resources should have been governed along the market-directed lines. However, he seems to have refuted the views of this School. A reference is also made to the School of thinking in India which favoured a frontal attack on the structure of ownership of property. Then, Brahmananda turns to present the Wage-Goods Approach which, according to him, follows along the classical lines but with some modifications, what is termed 'the Wage-Goods School' or 'the New-Classical School'. According to this School, unemployment is a function of the gap between available circulating capital in the form of Wage-Goods Fund and the necessary stock of circulating capital to provide an annual Wage-Goods flow adequate for regular, continuous and full-year employment to all members of labour force. This School, according to Brahmananda, holds the view that surplus labour could be transferred into useful employment with an increase in the aggregate supplies of wage-goods and without the adjunct of such wage-goods supporting such labour, 'Labour' itself has no meaning. Brahmananda has

27. A leading proponent of this School was B.R. Shenoy. This School believed that the autonomy of the market process would have established the terms of trade in favour of agriculture, capital-output ratio would have been lower and it would have led the savings-to-income ratio to be higher and pattern of investment to be in favour of agriculture. -Brahmananda, P.R. (1983). Aspects of Academic Thinking in India on Employment and Related Policies, ibid., Vol. II, pp. 686-87.

28. This School believed that only a direct attack on property distribution by large-scale effective land reform, involving land redistribution could directly help the interests of employment, for small holdings could be cultivated more intensively and therefore more employment could be provided, ibid., pp. 688-89

29. This School accepts the basic classical position of prevalence of diminishing returns, but rejects the classical proposition that there can be no long-run unemployment, ibid., p.690.
presented the Consumption-income Multiplier Approach in this writing which shows a positive relation between the macro supply of Wage-Goods (CN) and the volume of Real National Income (Y) and employment, that is, Y=f (CN). Policy implications of the Wage-Goods Model are also outlined in this Paper. Brahmananda also touched upon the Heavy Industry Model and discussed its demerits therein.

'The Development Process in the Indian Economy' is another popular work edited by P.R. Brahmananda and V.R. Panchamukhi in 1987. It consists of two Papers of P.R. Brahmananda which are dealt with below.

In the article titled 'Development Process: An Appraisal', Brahmananda, jointly with V.R. Panchamukhi, Provides a broad appraisal of development process of the Indian economy as a whole. While dealing with the development perspectives in the pre-independence period, the authors narrate the economic conditions prevailed in India during the British rule as explained and criticised by the Indian thinkers and scholars like Dadabhai Naorji, Balagangadhar Tilak, Mahatma Gandhi, Jawaharlal Nehru, Romesh Chander Dutt, Mahadev Govind Ranade, Gopala Krishna Gokhale and G.V. Joshi. The authors, in this article, opined that the Indian leaders and thinkers did not have a clear idea of the appropriate Model of the economic system to be adopted and the political leaders were not clear about the basic background situation in India. Brahmananda and Panchamukhi have questioned the views held by our political leaders then. The article gives a brief account of different development paths, which India has had to choose, such as, the autonomous free-market path, the heavy industry-industrialisation path and the Wage-goods dominated agricultural-rural development path. These three development strategies have been analyzed in brief and the demerits of the former two strategies have been mentioned here. The authors attempt at justifying the case for
the Wage-Goods path of Development from the standpoint of higher growth rates, balance of payments harmony, and of poverty eradication. The article discerns some of the structural breaks in the development process of the Indian economy. The first being the effect of independence, which witnessed a rise in the annual rate of growth in income of 3½ per cent and a rise in the growth rates of agriculture, industry, infrastructure facilities, education and social services. The second being the boom in agricultural harvests during the First Plan and then the Green Revolution around the second half of the sixties. The third being the growth rate of manufacturing production which came down during the mid-sixties and recovered after the mid-sixties. A broad picture of the development process of the Indian economy since independence has been presented which shows a rising trend in regard to the GDP from 9-10 per cent in 50s to 16 to 18 per cent in the mid-80s, the net saving to income ratio from 7-8 per cent in early 50s to 16-17 per cent by the mid-eighties, the aggregate wage-goods at an average rate between 3 and 3½ per cent and so on. The authors appear to have predicted the economy to be heading soon towards shortages in water, edible oils, pulses, petroleum products and high quality coal and it was foreseen that population would grow at more than 1 per cent by 2000 A.D. Major developments in some of the key sectors of the economy over the Plan period are also explained upto the Fifth Plan.

Another article entitled, 'Estimated Distribution Parameters and their Behaviour in Post-Independence Period', by Brahmananda and N.S. Iyengar, discusses the Indian experience of development under independence for nearly four decades with respect to the trends in distribution parameters. Hypotheses regarding the distribution parameters in the Indian economy have been empirically examined. In so far as the
poverty line is concerned, the writers hold the view that mass poverty could be attacked from the specific production and growth end rather than from the relative distribution end and opine that the Indian Planning should shift its preoccupation from relative inequality to mass poverty reduction to gain an edge. They noticed a mild tendency towards reduction in disparities in the bottom 10 per cent from mid-sixties and in the top 10 per cent from the late sixties. They also noticed a tendency towards a reduction in disparity in the bottom and top 5 per cent from the mid-sixties, and so is the same as regards the bottom and top 1 per cent. In conclusion, they maintain that the per capita real incomes and per capita consumption among all the fractile classes could be improved by accelerating the rate of economic growth. This leads the relative distributions remain unchanged though the absolute well-being of the mass of people goes up and that connotes 'Pareto-satisfactory or 'least Pareto-unsatisfactory' distribution policy. This could be obtained by increasing the ratio of employment to the labour force including removal of underemployment particularly in rural areas. The authors, finally, have recommended for the adoption of the Wage-Goods Model to achieve higher consumption growth rate for the bottom population.

2.5.2. A Brief Review of Research Papers

In this section, the Researcher seeks to present the core issues contained in the Research Papers of P.R. Brahmananda in the area of Planning and Development. There are over hundred articles of Brahmananda in this area, some of which have been reviewed below.

In an article entitled, 'Reflections on India's Five Year Plan' (1952) Brahmananda, with C.N. Vakil, commented on the Draft outline of the Five-Year Plan at the time of its publication in the context of the then Indian
economic conditions of strong inflationary pressures, lack of co-ordination between public and private sector, absence of a clear cut scheme of priorities and inconsistent and unclear policies governing price control and allocation of resources etc. Brahmananda and Vakil criticized certain policies contained in the Draft outline and gave suggestions. As regards the concept of mixed economy, they opined that the smooth functioning of mixed economy required the private business to undertake labour welfare measures and to accept a large share of social responsibilities for these would create public support for private enterprise. They viewed that the aggregate productive capacity could be increased by raising capital, importing equipment and by utilising the technicians, skilled labourers and adequate raw materials in the economy. They did not support the Planning Commission’s decisions to make huge investments on agriculture neglecting the industrial sector fully and they suggested to emphasise on those industries which would help agriculture indirectly like industries supplying constructive materials for irrigation projects. They further pointed out that a country’s investment potential would not depend merely on its size of National Income but also on the distribution of income, capacity to save, the public response to austerity programmes and the rate of population growth. They suggested to impose austerity programmes on the relatively rich classes and to regulate conspicuous consumption by the high-income groups. They supported the land redistribution measures for avoiding social revolutions.

In the concluding part of this article, Brahmananda and Vakil recommended to lay emphasis on poverty eradication and increasing food production and advocated to raise domestic resources.
In the Paper entitled, ‘Technical Knowledge and Managerial Capacity as Limiting Factors on Industrial Expansion in Underdeveloped Countries’ (1953), Brahmananda and Vakil discussed the issues related to technical knowledge and managerial efficiency and consider the both to be necessary and complementary in a country’s economic development, particularly for its industrial expansion. “The more efficient the management is, the greater the demand for technological knowledge”. They view that technical advance comes from experienced workers, from research departments of large firms or from independent specialized laboratories and research institutions. And such a technical research depends on the country’s economic development and it needs long-term investment, which the poor countries cannot afford. The writers have outlined the following techniques best suitable for underdeveloped countries:

a) those which can be quickly learned; b) those requiring little initial investment and no increase in the size of firms; c) those reducing the ‘gestation period’; d) those requiring less investment in specialized and skilled workers being appropriate to current educational standards; e) those saving scarce resources other than labour; f) those expanding production horizons, and increasing supplies such as minerals or electricity. They necessitate the need to seek technical knowledge with immediate practical application in the context of scarcity of resources.

‘The Structure of Capital in Indian Economy’ (1954), another Research Paper by Brahmananda, jointly with B.C. Desai, contains a note on the capital structure in the Indian economy. Brahmananda and Desai hold that while ascertaining the capital requirements for attaining different rates of expansion in National Income, the aggregate capital co-efficients or capital-output ratio should be worked out which necessitates a detailed
study of the capital structure in the economy. They termed the very concept of 'capital' as 'an amorphous concept'. However, they expressed dissatisfaction regarding the available statistical data in India pertaining to the capital structure as compared with the countries like Australia, New Zealand, Canada and others.

With the help of the data obtained from C.M.I (Centre for Monitoring Indian Economy) and R.B.I.B. (Reserve Bank of India Bulletin), Brahmananda and Desai computed the value of assets and plant and machinery in 1946. They also worked out the total income in 1946 for the net fixed assets in 1946 and also computed the value of income in 1939, net fixed assets, net plant and machinery, value of output and value added in 1939.

Finally, they arrived at an interesting conclusion that the Indian coefficient in most activities appeared to be higher as compared to other countries. Having derived the capital-output ratios in different fields, Brahmananda and Desai concluded that the capital-output ratio of 3:1 utilisation in the formulation of the Five-Year Plan was not based on accurate statistical data and they suggested the Planning Commission to revise the estimates contained in the Plan to avoid errors that would have occurred.

In 'Investment Pattern in The Second Five-Year Plan', a Paper submitted to the Panel of Economists, Planning Commission (1955), Brahmananda, with C.N. Vakil criticized the pattern of investment in the Second Five-Year Plan. They argued that the main reason for the slow

30. The problem discussed in this Paper was regarding the assignment of relative roles to industry as against agriculture, and within industry to heavy industry to light-industry, and within light industries between labour-intensive fields of activities and capital-intensive fields of activities.
rate of growth of industrial employment was the slow rate of growth of increase in the supplies of marketable surplus of food. They laid a stress on the development of certain heavy industries ancillary to agricultural production such as manufacture of equipments necessary for irrigation and power plants, equipments for fertilizer plants, intermediate goods like steel and cement and earth moving equipments for helping the development of irrigation and multi-purpose projects which in turn would solve the problem of wage-goods capital, a central bottleneck preventing higher rate of industrial expansion. They opined that this process would provide a growing market for various consumer goods, whose growth in turn would provide market for the development of heavy industries manufacturing equipments of consumer goods. They argued that in a country like India where agricultural production depended on monsoon and where even the short-term measures like provision of fertilizers, new methods of cultivation, better supplies of seeds and manufactures were depended on good rainfall, it was dangerous to follow a type of industrialization completely neglecting agriculture. They also pointed out that the approach of the Second Five-Year Plan, laying emphasis on heavy industries was completely based on the experience of the Soviet Union which had a different economic background. They attempted at proving the invalidity of the application of the Soviet Experience in India. According to them,

31. Vakil and Brahmananda appear to have refuted the Approach emphasized on the development of heavy industries of 'all sorts'. *Ibid.*, p. 54

32. Brahmananda and Vakil pointed out that the problem in the case of Soviet Union in regard to agricultural production was mere one of deficiency of marketable surplus rather than one of overall production; whereas in the case of India, there existed the problem of both a relatively lower production and a lower proportion of marketable surplus. *Ibid.*, p. 55.

33. Vakil and Brahmananda had opined that the Japanese experience which concentrated on manufacture of low-cost capital equipment of various types was preferable to that of the Soviet experience. *Ibid.*, p. 60.
“the final demand for various types of consumer goods must ultimately depend upon the quantity of marketable surplus of food and the conditions governing its supply”. They opine, the development of heavy industries depend on the growing agricultural base since the demand for products of heavy industries is ultimately derived from the demand for consumer goods, the demand for which is ultimately derived from the marketable surplus of food and other wage-goods. Therefore, they suggested developing the heavy industries ancillary to agriculture. Secondly, they advised to step up the expansion of consumer goods industries built for export markets. Thirdly, they suggested to develop small-scale and cottage units by encouraging those industries which provided cheap equipments for them.  

In another Paper titled, 'Institutional Implications of a Bolder plan' (1955), Brahmananda, with Vakil, portrayed an Alternative Approach during the Second Five-Year Plan as suitable to the conditions prevailed in India. A ‘Bolder Plan’, according to them, implied the stepping up of the rate of plough-back of resources in investment, or in other words, it meant raising the proportion of savings to National Income. To attain this, they had suggested the central policy to choose investment pattern as well as the methods of operation in such a way as to maximize the ratio of net revenue to capital and a high net revenue ratio would mean more of resources available for plough-back. They suggested certain institutional and organizational changes in the rural sector to gain more from this sector. Here they have discussed the issues pertaining to the problem of increasing marketable supplies, measures to utilize idle labour power, measures for built-in flexibility and have also dealt with positive policy for

employment and policy towards labour welfare measures. They considered the procurement of a large quantity of marketable surplus of food as the central problem in the economy. To increase the marketable surplus of food, Vakil and Brahmananda suggested to introduce monopoly purchases of marketable surplus of grains with a guarantee that the prices would not go below a particular minimum so that during periods of excess production, the farmers would not suffer a shrinkage in incomes. It was also advised that the State should introduce both distribution agencies who sell consumer and other goods to the farmers and buy the food produced by the farmers, and thus the tertiary sector could play a central role in capital formation. As far as the problem of utilizing idle labour power was concerned, the authors visualized that a part of surplus labour power could be harnessed through monetary incentives in the form of money wages or a system of taxes and subsidies and a part could be utilized through incentives in kind. According to them, if the government could directly get access to marketable surplus of food and other requisites of labour, a pool of these commodities could be built up in different regions and policies of employment could be stipulated. They opined that this process would become cumulative only if the labour power which involved money burden was utilized in the fields which tend to be self-financing, that is, output produced must be marketable. They also suggested to utilize a part of labour force through incentives in the form of attractions of a rising social status. They advocated that the period of excess production of agricultural output could be converted into the period of high capital formation and the excess supply of food could be utilized in providing employment in a number of short-term schemes in each region, if such short-term schemes were keyed to expansion in agricultural output or in


36. Ibid., Appendix II- Measures to Utilise Idle or Under Utilised Labour Power, p.76
industries ancillary to it. They also suggested to undertake certain labour welfare measures suited to India both for the employed and unemployed labourers. In this direction, they suggested to utilize the technique of indirect taxation to bring about a larger volume of employment since the employed workers might not object to the procedure provided the reduction in their standard of living in the form of higher prices of goods they buy rather than that of reduction in their pay packets.

In his article titled, 'Perspective Planning' (1962), Brahmananda upheld the need to increase the production of basic consumption goods with a view to abolishing mass poverty and indigence in the economy. He examined the impact of our Five-Year Plans on consumption standards of the poorer sections of the economy and prescribed several measures to eliminate the problem of mass poverty and indigence in India before the Fifth Plan to attain the welfare goal. To achieve this, an alternative strategy concerning the rate of growth of the production and the pattern of distribution of essential consumer goods to poorer sections of the economy was suggested in this Paper. He opines that productive-efficiency in a poor country depends on an increase in per capita consumption. He has established a relation between the basic consumption and output by treating the former as a prerequisite for the latter. According to him, basic consumption is a prerequisite for the physical efforts and sacrifices involved in the process of production, and this would be related to aggregate output potential or to aggregate potential supply of optimum effort intensity. He explains that the potential capacity of a labour force measured in terms of output which he produces, varies with, (a) the quantity and quality of co-operant factors like capital equipments,

37. Ibid., Appendix III-'Measures for Built-in Flexibility', pp. 78-79
38. Ibid., Appendix V-'Policy Towards Labour Welfare Measures', pp. 85-86
managerial ability, units of fixed factors like land and general environment; (b) the quantity and quality of his own consumption. Thus, the productive efficiency depends upon the degree of (fixed) capital intensity and the degree of (basic) consumption intensity. Brahmananda opines that given the former, a rise in the latter can lead to an increase in the efficiency of the utilization of human factor. Brahmananda worked out the constituents of the national minimum of the basic consumption goods and services which included a minimum basic consumption bundle of food-grains, fruits and vegetables, meat, fish and eggs, milk, and other dairy products, clothing, foot wear, salt and sugar. He recommended to device some institutional agency to assure distribution of these commodities to the indigent sector. Besides these consumption goods, he also recommended for the supply of free primary education, a minimum of medical aid facilities, sanitation facilities, supply of hygienic drinking water and a minimum of housing facilities to the indigent classes.

He henceforth insisted on the need for increasing investments in the production of the basic consumption goods or the wage-goods. He also stressed on the need to device appropriate fiscal and monetary measures to make the increased production of consumer goods be matched by increased effective demand from the poorer classes. Expansion of basic consumption supplies and their availability to the poor, according to Brahmananda, would increase the level of efficiency and in a general way add to income and enable a step-up in the growth rate. Thus, in this Paper, he brings out the need of increasing the consumption standards of the poorer classes in terms of calories.

In his article, 'A Very Skeptical Note on the Fifth Plan Approach to Solution of Economic Backwardness as Defined by the Planners' (1973), Brahmananda criticized the Approach followed by the Planning
Commission to attain the goals of development of backward areas and of upliftment of the bottom 30 per cent population's level of living as was discussed in the 'Approach to the 5th Plan'. He disagreed with the Approach adopted by the Planning Commission as a solution to poverty eradication and economic backwardness. He opined that the concepts like capitalization, overall capital intensity, linkage effects, which the Planners believed in were not the solutions to the real problem. He considered 'mobility of labour to be a very significant factor in the removal of poverty and economic backwardness, in the absence of which, according to him, the social cost of poverty removal would be enormous. He held the view that prevalence of 'labour mobility' would bring greater prospects for removal of regional or district-wise imbalances in economic well-being. Further, he recommended to improve productivity and production of those crops which would yield income and serve the need of consumption of the poor such as cereals and pulses. He opined that poverty removal in terms of district-wise differences in proportion below poverty-line required a pattern of allocation and development emphasizing basic capital, basic capital-output ratio and basic plough-back to surplus ratio. He further proposed to take steps towards integrating the commodity-development goals with the poverty removal needs, with the right choice of commodities. For this, he stressed on the need to acquire district-wise data regarding income-distribution, consumption, consumption distribution, labour force, employment and integral savings fund.

In their Research Paper titled, 'Capital: Capital Supply and Growth, Sources of Savings' (1974), Brahmananda and C.N. Vakil have dealt with the facts relating to savings in India during the First and the Second Plan. They stated that the programmes of economic development could be carried out only through a rise in the rate of capital formation depending
upon an increase in the ratio of savings to national income. In this Paper, they estimated the sources of finance for net capital formation during 1951-59, distribution of savings between public and private sectors, outlay of central and state governments, the sources of finance for capital formation in private sector, for the period 1951-59.

In his writing entitled, 'The Future of Planning and Planning of Future' (1976), Brahmananda draws attention to the need for a quick transition to the Wage-Goods Model. He commented on the Draft Fifth Five-Year Plan in regard to growth rates, savings and capital-output ratios and clearly stated that the rising capital-output ratio or the falling output-to-capital ratio was the real problem with all our Plans. In his own words, "If the secular course of capital expansion is accompanied by diminishing returns, the Indian economy faces the prospect of a stationary state. If we go on in this rate, such a state may not be avoided in the near future. And if we are landed with the present tendency of population growth, we will be left in a stationary state of woe with no prospect of remedy through capital accumulation". He pleaded for the adoption of the Wage-Goods Model to bring down the capital-output ratio. He considered poverty and unemployment to be the major economic problems in India. He states here that mass poverty exists in India due to the inadequate supply of wage-goods, "and thus there is a basic Wage-Goods Gap in the economy which problem of unemployment explains poverty". He maintained that this gap existed due to the deficient capacity to produce wage-goods and this deficiency was because of the inadequacy of total capital stock designed and directed towards the production of these goods particularly since the


40. Ibid., p. 117.
Second Plan. As far as the problem of unemployment was concerned, Brahmananda maintained that eradication of disguised unemployment in the rural areas was conditional upon additional supplies of wage-goods as the employment of such labourers would create additional demand for wage-goods. He argued that the mechanism to eradicate unemployment was to increase the additional supply of wage-goods leading to an improvement in per capita real income in terms of wage-goods or in the real wage-rates. Thus, to Brahmananda, "there are no two problems like poverty and unemployment, but there exists only one problem, that is, an inadequate supply of wage-goods." In this article, Brahmananda called for the adoption of the Wage-Goods Model to tackle the problems of increasing capital-output ratio, mass poverty and unemployment.

A Research Paper titled 'The Falling Economy and How to Revive it' (1978), is one of the lengthiest articles running to over hundred pages, divided into eight parts. It begins with Brahmananda's recollection of the long way of his journey or quest for an analytical framework of economic theory from the angle of the Indian economy and similar economies, wherein he speaks of his devoted and eminent teachers like Thirumalachar, S.L. Rama Rao and others who taught him Ricardo's Principles, Marginalists, etc, and C.N. Vakil, with whom he could derive a new development paradigm termed the Wage-Goods Paradigm, in 1956. Brahmananda then presents a view of the course of leading indicators in the Indian economy for the period 1950-51 to 1975-76 with the help of a large number of economic variables like agents of production and productivity, supply categories, employment, savings and investment, prices, money supply, monetary resources, rates of return, government expenditure and taxes, external trade and well-being of the poor.

41. Ibid., p. 120.
He showed that the linear growth rates in magnitudes like output and categories thereof, wage-goods supply, profit rates, real interest rates, real wages, total employability, were low and were falling and the magnitudes like prices and population were high and going up and the elasticities related to them were also going up. He opined that the failure and the fall of the economy was due to the blind application of a non-relevant anyway under our conditions of the particular theoretical scheme of economics.

Brahmananda has empirically tested more than twenty five important hypotheses concerning population, relation between capital and net output, determinants of real national income, wage-goods supply, real wage-rate and employment, factor reward rates and capital intensity, relation between capital-output ratio and profit rate, proportional wages and profit rate, relation between interest and profit, relation between prices and interest, investment, and interest, liquidity preference and interest, quantity of money, output and prices, wage-rates and prices, terms of trade and sectoral prices, income, surplus and savings, growth of income, profits and investment, credit reserves and money supply, real income, price level and demand for money, price level and real balances and consumption demand on production. He questions the relevance of the Keynesian and Neo-classical paradigms under the Indian conditions and finally brings forth the New system in seven equations which is a fairly complete outline of the new-classical macro-economic system appropriately rendered to suit the Indian economy. Brahmananda outlined six goals which should be the concern of economic planning and policy, which are as follows: i. a stabilization of the population size at a reasonable number (say at about 700 million by about the middle of eighties), so as to, once for all, rid the economy definitively of the spectre of the stationary state; ii. as low a level of the prospective time path of the capital-output ratios in the sphere of
integrated wage-goods production, through maximum encouragement to R and D in this area. A continued reduction in the material cost of production of wage-goods should be aimed at. The choice of techniques should also have the above goal of reducing costs of production of integrated wage-goods. Part of the higher costs is due to the increased role of industrial, metal, mineral, and chemical-based inputs in agricultural production. This may not be completely avoided but efforts for recycling of organic wastes can help to keep the capital-output ratios lower; iii. in each year, as large a rate of flow of real national income as is feasible with the given initial capital stock, supplies of input materials, and of ready man power; iv. as high a growth-rate in the wage-goods sector and employment through structural shifts in pattern of capital allocation, a rise in the proportion of basic savings to national income and appropriate pattern of new investment; v. reasonable price stability, if not steadily falling prices, through control, period by period, in money supply, credit control and bank rate policy and build-up and operations in buffer stocks; vi. as high a growth-rate in exports in exchange earnings as is desirable in the context of the needed growth-rate in imports flowing from (ii) to (iv).

In 'The Employment Function in Indian Economy' (1980), Brahmananda discusses the factors determining employment in the Indian economy, and suggests various ways of increasing employment. He differentiates between the terms 'work-force' and 'labour-force', whereas the former refers to all persons, male and female who fall in the age group of 15 to 59, the latter does not include all the members of the former, but it refers to all those who are employed for more than a prescribed number of days in a year on one or several jobs, and those who are willing to work but are not able to get the above type of employment. He has pointed out

42. Work-force is a function of age distribution of population given the size of population.
seven parameters determining the volume of employment given the volume of work-force, as follows:

1. The aggregate size of the basic consumption-(wage) Fund at the beginning of the each year available for disbursement to workers and to self employed. (WGF)

2. The annual capacity to produce wage-goods. (WG)

3. The wage-rate in the organized sector both in urban and rural areas as determined by minimum wage laws and trade union bargaining. (EXW)

4. The capital-output ratio in the basic goods sector or in the integrated wage-goods sector. (KOWG)

5. The ratio of employed labour to capital stock, or what is known as the capital-labour intensity conditions. (KLX)

6. The excess per capita consumption over intrinsic efficiency requirement of wage-goods in the self-employed and the upper wage-bracket and salaried sectors. (EXC)

7. Reduction in the growth or size of population (PPLN), which is a factor contributing to larger employment, since wage-goods are released for consumption by others. (D)

Thus, he presents the employment function as, \( N = f(\text{WGF, KOWG, WG, EXW, KLX, EXC, D}) \)

It is clearly given that an increase in WF, WGF, WG, and a fall in KOWG, EXW, KLX, EXC and population would lead to increases in employment. He suggested to increase the wage-goods capacity at a faster rate, to improve in commodity productivity in this sector, to bring a reduction in the wage of workers in higher-pay-packets, a reduction in consumption of superior brackets in the self-employed, a reduction in
government consumption and other forms of unproductive outlays and a reduction in population growth. He pointed out that serious mistakes were made at policy level in the past in the spheres of capital allocation, investment pattern and argued in favour of the Wage-Goods Model from the viewpoint of employment expansion.

In the Paper, ‘Relevance of Wage-Goods Model to Seventh Plan Strategy’ (1984), Brahmananda recommends for the adoption of an integrated approach to achieve the goals of ‘work, food, and productivity’. He noted some of the points contained in the Approach Paper of the Seventh Plan such as the desire to shift the pattern of investment in favour of agricultural and related commodities, the emphasis on industrial infrastructure specially in relation to the development of agricultural and related wage-goods, an accent on a reduction in the incremental capital-output ratio from 5:1 to about 4:1 and the desire to keep the savings to income ratio constant at about 24 per cent. He supported these views of the Planning Commission which favoured poverty eradication, employment expansion and growth components and growth rates suited to the former and its emphasis on the production of wage-goods with a view to containing inflation, since these ideas were a part of the Wage-Goods Strategy of Development which was advocated earlier by himself and C.N.Vakil. However, he also brought out certain defects contained in the Approach Paper. He suggested to bring some fundamental changes in Planning and Development Strategy. The New Strategy as such must double the rate of growth of supplies of wage-goods in the economy from the rate of 2.5 per cent per annum to a minimum of 5 per cent to achieve the growth rate of 8 per cent. He held that this doubling of the wage-goods would imply a minimum allocation of 55 to 60 per cent of the investible funds as against the then allocation of 25 per cent and would enable a rise
in savings-to-income ratio from the then 23 per cent to 30 per cent. He also insisted on the expansion of public distribution system to purchase and absorb an increasing portion of the additional supplies of wage-goods, and to utilize partly to expand employment in investments in irrigation, flood control, digging of channels, road and other transport, road building, forestry, live stock and fisheries development, house construction, additional production of non-food wage-goods and services in trade. It was argued that employment and poverty implications of this type would result in a reduction of the burden of surplus labour in agriculture. Bringing the disguised unemployed into full work employment would result in the improvement in productivity along with food and work. Brahmananda called for such an Integrated Approach to attain the goals of 'work, food and productivity.'

Another writing of him, entitled, 'The Seventh Five-Year Plan' (1986), recites similar views as in the previous article. Here Brahmananda appears to have commented on some of the objectives of the Seventh Plan calling the Plan 'non-optimal'. Taking into account some of the distinct features of the Plan such as, emphasis on increasing wage-goods supplies by an annual average rate of 4.5 per cent, employment generation, poverty eradication, he opined that the output mode of the Plan was oriented to the Wage-Goods Model in contrast to the earlier Mahalanobis Model. However, he argued that the output growth rate target of 5 per cent of the economy per annum could not be attained and the overall policy goals of the Plan would be clouded as the pace of improvement in agricultural performance would be low due to the problems of capital shortage and organizational defects.

and its significance. Brahmananda has referred to the term ‘rural development’ as ‘the priority production and investment attention to the commodities primarily produced in rural areas’. To him, priority commodities development has a human and employment angle as it concerns itself with the population and labour habitats in rural areas. Rural development also includes institutional development in supply of finance, governmental services, supply of education and overhead infrastructure facilities, and thus the concept of rural development has a ‘threefold’ angle in ‘commodity, people and institutions’.

It was observed that labour usually moved to the towns where there were relatively more employment opportunities and hence rural development would lose its priority. But the capital required for absorbing this portion of labour, it is said, does not suffice in a country like India which causes unemployment and slums in urban areas. However, since the commodity wages that the lowest placed labour gets are lower in the urban areas than in rural areas, labour pressure in rural areas would increase causing disguised unemployment. He thinks that the Western Models of Development with priority to manufacturing and urban areas do not suit the conditions prevailing in a country like India. Rural development was the fundamental task to be taken to make our country developed, Brahmananda visualized so. Having referred to the French physiocrats and to the classical economists like Ricardo, Marx, and others, Brahmananda makes it a point that it is the growth of the wage-goods products consisting mainly of agriculture, that would determine the level of employment and the well-being of the people.

He has listed the features of the Model and has explained its relevance in detail. He defines the Wage-Goods as the commodities whose production has to be expanded at a substantially faster rate than the growth rate of population. They comprise consumption necessities like food grains, fruits and vegetables, milk, eggs, fish and other animal husbandry products, sugar and gur, edible oils, cloth, matches, soap, kerosene and salt. He points out here that unemployment prevails due to the existence of ‘Wage-Goods Gap’, that is, ‘gap between the output capacity of wage-goods to yield the full employability state and the actual output capacity in wage-goods. He criticizes the Mahalanobis Strategy of Development in respect of output growth, employment growth, inflationary trends, capital-output ratio, and saving-to-income ratio. Based on his studies, Brahmananda states that accelerated capital accumulation is not the way out for the Indian economy, “the faster we accumulate, the sooner we reach the stationary state”. He has stressed on the adoption of policies regarding stabilization of population before the commodity stationary state emerges, without which the Indian economy has no economic future.

He has recommended for an adequate public distribution system in respect of crucial commodities to keep the price level stable. He also recommended for keeping the interest rates high in order to increase savings. He brings in the merits of the Wage-Goods Model over the Mahalanobis Strategy and sues for the adoption of the former.

In his article entitled, ‘Employment: A New Planning Paradigm Needed’ (1997), Brahmananda has discussed a new paradigm with a view to achieving employment expansion. He recognized the Wage-Goods Gap as the main constraint for employment expansion. He says that if the
massive full employment programme is to be launched, the capacity to expand supplies of wage-goods in the form of surpluses should be raised to satisfy the additional need that would arise as the full employment programme is launched. It was estimated that the wage-goods gap was roughly 20-25 per cent of the existing flows of wage-goods supply. He opined that the wage-goods gap would easily double the poverty gap, the gap in necessities required to abolish poverty. When the disguised unemployed are employed, the demand for wage-goods would increase, and if their supply is fixed, then the disguised unemployed could not be removed from their existing occupations. He says that a programme of full employment, integrated with input-output implications, is conditioned by additional capacities to produce wage-goods and also other material inputs co-operant in the process of employment expansion. This includes surpluses of building materials, seeds, agricultural raw-materials, simple medicines and drugs, metal materials and simple tools and equipments. The full employment programme would mean a substantial expansion in products and services such as road building, teaching, supply of medical and health facilities, construction of water tanks and reservoirs. Brahmananda estimated that nearly 40 per cent of the expanded employment would be in services. It was viewed that as employment expansion would lead to an additional demand for food, agricultural and animal husbandry, materials and products, there will be an expansion in these sectors as well, whose expansion is complementary and primary to expansion in services. In this way, Brahmananda says, a provision of additional consumption necessities leads to a simultaneous expansion in investment in physical and human development. He stated that the incremental capital-output ratios in the group of products and services whose supplies will expand along with employment would be substantially lower than in schemes of industrialization. Considering the Mahalanobis
Strategy of Development a wrong strategy for employment expansion in the Indian context, Brahmananda outlines five components of Policy Strategy to be incorporated by the Planning Commission as a remedy for unemployment problem; the growth of capacity in wage-goods and related materials; a low wage/earnings disparity and capital-output ratio; low capital labour technology; promotion of preference in favour of services against physical commodities in employment expansion programmes and finally an active population-size-stabilisation policy.

With these, Brahmananda wished to look forward to a more prosperous Indian economy.

In his article, ‘Raising The Savings Ratio’ (1997), Brahmananda discusses the ways of raising savings ratio in India. He defines that gross savings depend on the gross surplus and the net savings on the net surplus in the economy. The savings equation is given- If \( Y^* \) is the GDP and \( CN \) is necessary consumption, including \( T \) for necessary taxes for minimal government, then \( Y^*-CN \) is the Gross Surplus, being termed ‘Q’. After D is deducted as maintenance and depreciation for equipments, then \( SM \) is obtained as the maximum net savings, i.e., \( SM=Q-D \). Further, if from \( SM \), the luxury consumption in firms and by households, termed CL and unnecessary government consumption, termed GL, are deducted, then the net savings \( S \) is obtained, i.e., \( (SM - (CL+GL))=S \). Brahmananda has suggested various measures to increase the savings ratio. A substantial reduction in revenue expenditure and in revenue deficit would increase gross savings and gross investments through enterprises. He opines that in the Indian economy, D (maintenance and depreciation for equipments) has not been adequately provided for. An adequate provision for D would make enterprises able to buy latest equipments and improve their productivity. At the same time, the profits of public enterprises will go up.
and their own net plough-back ratio would also rise. He suggested the firms and households to reduce their luxury consumption. All these involve maximum incentives from the fiscal end. From the monetary end, he recommended to control inflation and to maintain the real interest rates slightly above the growth rate. He sums up that the attainment of savings-to-income ratio to 35-40 per cent must be the aim of the economy. With a gross investment ratio of 35 per cent and a capital-output ratio of 4, an annual growth rate of 9 per cent could be obtained which would further boost savings-to-income ratio, he estimated.

The Research Paper titled, 'Declining Farm and Food Growth Rates' (1997), looks at the problem of declining agricultural production over the Planning period and highlights on the need to a bold shift in the Planning pattern. Brahmananda here stated that from 1990-91 onwards, the growth rate of agricultural production tended to decline to 1.3 per cent – substantially less than the population growth rate. The growth rates in most of the crops, specially, cereals (rice and coarse) and pulses which were the primary source of proteins for majority of population, were falling. He noted that during the successive Five-Year Plans, except in the Fifth Plan, there emerged a wide gap between the actual and the target growth of food grains and of most other crops as well. He interpreted three different approaches for determining the projected demand for food grains and other consumption necessities or wage-goods.

43. During the Sixth Plan the target was 154 million tonnes and the terminal production was 146 million tonnes. In the 7th and the 8th Plans, the actual productions were 171 million tonnes and 191 million tonnes as against the goal of 183 million tonnes and 210 million tones respectively.
The first approach postulates different values of the growth rates of real national income and then works out the growth rate of demand for essential wage-goods on the basis of estimates of income elasticities of demand for the latter. The second approach projects alternative values of growth rate of employment and then derives the growth rates of wage-goods on the basis of employment elasticity of demand for wage-goods. And the third approach would postulate different values of growth rates of wage-goods and would work out projected growth rates of employment under alternative values of the real wage-rate. In both the second and the third approaches, the growth rate of income will be secondarily derived. According to him, the first approach would account for a lower growth rate of demand for wage-goods and therefore he preferred the second and the third approaches where it was found to obtain the higher growth rate of agricultural output and only then could the shortages of capacities in fertilizers, irrigation, be accounted for. He pinpointed that the Planning pattern required a fundamental change with a bold shift towards employment orientation to attain the growth rate targets of 4 per cent for agricultural production and 3 per cent for food crops in the Ninth Five-Year Plan.

In his article, 'Impact of Growing Net Product Gap' (1997), Brahmananda outlines the causes for the growing net-product gap between agriculture and non-agriculture. He observed that when the development process began in India, priority attention was given to manufacturing even before sufficient progress was achieved in the agricultural sector and to tertiary or service sector before the manufacturing stage was completed and this caused severe distortions in

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44. It is given that this issue had been touched upon by V.K.R.V. Rao in his address to the World Economic Congress in 1936 and by Dandekar, but however, they did not elucidate the reasons for the growing gap.
the growth of per capita net product in the three groups, that is, agriculture, manufacturing and tertiary sectors. It was noticed that over nearly 50 years, the relative share of agriculture and allied activities like forestry, livestock, fishing, hunting, plantations and horticulture dropped by 44 per cent whereas the relative workforce in them declined by less than 6 per cent. The rate of growth of per worker product in agriculture was going up at a lower rate than in non-agriculture over the post-independence and post-plan era and the same was in the case of real wages as well. Brahmananda has mentioned various reasons for this widening gap as follows.

- The growth rate of agricultural production in the post-independence period has been lower than that in non-agriculture.
- Whereas physical and human capital are important for value-added in industry, land is important in agriculture. Land area has not been increasing whereas capital stock has been increasing.
- Capital and infrastructure for agriculture have grown at a lower rate than those required for industry.
- The burden of disguised unemployment has been mostly borne by agriculture.
- Production systems in agriculture continue to be characterized by small and marginal farms in most part of India.
- The growth of crop productivity has occurred in a few portions of India. Crop productivity in dry areas has been heavily neglected.
- The sources of non-farm employment in rural areas have also not expanded in a big way and the pressure on agriculture continues.
- Inflation has adversely affected the workers in agriculture more than workers in other sectors.
The terms of trade have not been in favour of agriculture. Not all crops get the full benefit of public purchase at convenient prices. Farms are still exposed to the incidence of fluctuations in prices due to vagaries in production.

During his last days, Brahmananda wrote several articles covering the development aspects of Karnataka.

In his article entitled, 'Some Aspects of Growth in Karnataka' (1999), Brahmananda focused on the trend growth rates in net state domestic product and analysed the contribution of different sectors to growth in Karnataka.

Brahmananda pointed out that the growth of food grains production was lower than that of population and was also characterized by high instability in respect of pulses, cotton, chillies, and spices. It is given that the bulk of population depends on agriculture, and a good portion of agricultural population depends upon subsistence farming, and hence, attention must be paid to improve yield in food grains both in cereals and pulses. He opines that manufacturing also holds some promise from the growth angle in Karnataka and the expansion of industrial base in Karnataka depends upon power generation. Since Karnataka depends on hydel sources which suffer from droughts, Brahmananda suggests to make large-scale investment in power generation from alternative sources. While discussing the role of state government, he says that the planned development of the state economy depends on expenditure on the efficient maintenance of law, order and justice and the provision of social and economic infrastructure. Social infrastructure expenditures include outlays on education, medical and health care, supply of pure drinking water, maintenance and expansion of roads, highways and bridges, agriculture
and other extension facilities, maintenance of libraries, special programmes for children and women and so on, whereas economic infrastructure outlays include capital outlays on public utility services like electricity, gas, public water supplies, transport, communication and storage facilities, expansion of irrigation works, river valley projects and afforestation schemes.

Then he speaks of the constraints on future growth in Karnataka. He opines that though there is a huge supply of trained and skilled man power, specially in engineering, medicine, arts and crafts, there is a severe shortage of capital and probably term-finance, that makes the state suffer. He thought that the industrial growth might be hampered by the lack of adequate supply of power and abundant and cheap transport facilities. He also suggested that the government should improve mass transport as the capital light and high skilled oriented industries and services which were moving towards Karnataka would create more and more demand for labour, and in turn the pressure on transport and accommodation would also increase. He laid a stress on improving mass transport specially in Bangalore to avoid occurrence of accidents. At the same time, it was also suggested to improve water supply and other public utility services like electricity and gas. He placed a proposal to develop other metropolitan centers like Bangalore particularly in Western and Northern parts of Karnataka. He visualizes that the western and north-western portions in Karnataka have no constraints of water supply and hydel power would be cheaper there. He also advised to convert all the rail tracks into broadguage and give links to Bombay and northern centers which helps development of western and north-western portions and also provides employment for the people in north and north-western dry tracts. He thought that numerous water-falls that get formed during the rainy season
in the west coast could be utilized for power generation during some months and supplement power through other sources of energy like coal.

Brahmananda viewed that development of industry and infrastructure in Karnataka would require large inflows of capital.

Two writings of Brahmananda analyse the states' performance in India from the angle of the overall rate of growth in 1990s and describe the performance of mid-level states in the income-growth hierarchy.\(^{45}\) It is stated that Gujarat, Maharashtra, Karnataka and Tamil Nadu have attained more than 5 per cent growth rates of real income from 1990-91 and they form the first group in income-growth hierarchy. The second group consists of the middle-states in this hierarchy which include Kerala, West Bengal, Haryana, Punjab and Andhra Pradesh. Brahmananda analysed the prospects of these five states in regard to their economic and social development.

As regards Kerala, Brahmananda opined that a reduction in the number of educated unemployed, high social development here would indicate a good sign of development. He suggested to increase the level of skills and training and to increase the institutions for technology learning in the state like IIT, being funded largely by remittance inflows.

His Research showed that West Bengal did not succeed in controlling the population growth and showed a negative sign of development. Though he was happy with its agricultural growth, he suggested to develop software sector in this State.

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Haryana, according to his Research, had the average growth rate of 4.52 per cent during the eight year period from 1990-91 to 1998-99. Though it had a very high growth rates in agriculture and a high prospects of industrial expansion, Brahmananda felt that this State lagged behind in respect of social development indicators.

Punjab, according to him, had not yet been able to build up industries and services. He suggested to improve savings rates and emphasized on human capital formation.

As far as Andhra Pradesh was concerned, Brahmananda expressed that this State showed a positive performance with respect to administrative efficiency and in inviting software capital and promoting its development in a big way. Brahmananda, in total, maintained that these five States needed huge capital inflows to open up their economies.

He considered the extent of increase in the State domestic product to be one of the important measures of economic development which reflects the well-being levels of the people in the States. The growth rates of various States in India have been presented for the period of 34 years, from 1960-61 to 1980-81 to 1994-95. The States which had the growth rates above that of the economy at 3.99 per cent for the entire period of these 34 years include Maharashtra, Gujarat, Haryana, Punjab, Orissa, Karnataka, Tripura, Rajasthan and Delhi. The States having their performance below that of the national economy for the above said period include Bihar, Uttar Pradesh, Tamil Nadu, Kerala, West Bengal, Assam, Himachal Pradesh, Madhya Pradesh and Jammu and Kashmir.46

Then, based on the RBI’s Handbook of Statistics (1999), Brahmananda gives the economic growth rates of States over a 37-year period, from 1960-61 to 1997-98. The States that had the highest compound growth rates per annum include Haryana (5.1 per cent), Punjab (4.9 per cent), Maharashtra (4.7 per cent), Rajasthan (4.5 per cent) and Karnataka (4.0 per cent), Gujarat (4.3 per cent), Andhra Pradesh (4.2 per cent) and Tamil Nadu (4.0 per cent). Kerala and Madhya Pradesh with 3.7 per cent per annum and West Bengal and Assam with 3.6 per cent per annum follow the next in the hierarchical order. Uttar Pradesh with 3.4 per cent and Bihar with 2.6 per cent per annum were at the lowest strata.

In his article, ‘Thoughts on the New Tertiary Revolution’ (2001), Brahmananda offers a note on the changing prospects in the service sector and the development therein due to major innovations in telecommunication, information and internet in the new millennium. The service sector also constitutes transport, storage, professional and community services, business services, banking and financial services, hotels and restaurants, Government administration and domestic and personal services. Brahmananda talks of the drastic effects of new developments in telecommunication, information technology and internet on the above mentioned services. It is given that “the transport requirements would be economized and made cheaper since the new development would enable work to be performed often at household sites. With the use of internet and web services, inventory requirements by firms

47. Brahmananda opined that India entered into the new millennium and a major Schumpeterian Technological Revolution in the Tertiary or Services sector had begun here with the new developments. In the world of economic history, hitherto, the revolution occurred in the prigitary and secondary sectors and it was probably for the first time that the services had been affected by a major innovation. - Brahmananda P.R. (2001)- ‘Thoughts on The New Tertiary Revolution’, in Balachandra L., Mungekar, Dilip M. Nachane, Rao Manohar M.J. (eds.), 2001, ‘Indian Economy in the New Millennium’, Himalaya Publishing House, p.39
and households will be reduced since availabilities can be arranged at short notice. Business services are being revolutionized. The market now is a network of exchange linked by the latest knowledge on the part of the participants and it is a store of information as well. Brahmananda discerned that the new developments in internet services also affected the professional services like those of doctors, lawyers, teachers and tutors, advisers of various sort. As far as the banking and finance, and the government administration were concerned, Brahmananda thought that these services could also be revolutionized with the use of internet system and computers. Further he attempts at analyzing the effects of the service sector revolution on the commodity production sector. He has stated that the tertiary or the service sector revolution would start first affecting services and then the commodities, “clearly the portion of commodity demands generated by the service sector in the old form will now be reduced significantly.” He projected a shrink in the sphere of production of manufacturing industries in course of time. However, Brahmananda seems to have suggested to concentrate on the essential wage-goods and improve the productivity and production therein and then to go along in a big way the new services revolution sector. He laid emphasis on establishing a large number of teaching and training institutions in the new lines and opined that this by itself would create the base for large development in India that would make the growth rates cross 9 to 10 per cent.

In his Research Paper entitled, ‘Emergence of New Malthusian Phenomenon’ (2001), Brahmananda shows the existence of a gap between the growth rates of population and agricultural production and

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49. Ibid., p. 42.
food production resulted by inappropriate planning and wrong economic policies. Based on the data pertaining to the trend growth rate of agricultural production in terms of the composite of crops like edible oilseeds, jute and mesta, sugarcane, he has estimated that during the years 1994-95, 1996-97, 1999-2000 and during 1994-95, 95-96, 96-97, and 1998-99, the growth rate of food grains and of agricultural production were higher than that of population respectively. But in all the other years, of the eleven years from 1990-91 to 2001-02, the population growth rate was higher than that of agricultural production leading to larger imports to maintain a balance between consumption and production causing relatively higher prices of food grains and hence lower purchasing power of the poor. Brahmananda seems to have denounced the political parties responsible for this failure to keep basic production growth on par with population growth and thus responsible for hindering the growth process of the economy and for ignoring the interests of the poor masses.

Brahmananda projected a sharp decline in agricultural production and in production of food crops during 2002-03 onwards due to the projected occurrence of droughts, particularly in States of Karnataka, Tamil Nadu, Maharashtra, Andhra Pradesh, Uttar Pradesh, Bihar, Madhya Pradesh and in West Bengal causing a decline in the growth rates of the economy.\(^5\) It had been forecast that the severe drought during the Kharif season would affect the production of crops like rice, jowar, bajra, maize, gram, cotton and most of the oil seeds and with the fall in agricultural production, specially food grains, the marketable surplus would also be adversely affected. Further, Brahmananda explained the effects of a decline in agricultural production on the other sectors. When agricultural

crops fail, directly or indirectly, the output in the manufacturing sector would also fall since many of the agricultural crops would become raw materials for industrial output. Brahmananda opined that a 10 per cent of drop in agricultural output would cause a drop in industrial growth rate by at least 2-3 per cent. It was also forecast that the tertiary sector would be affected since a considerable portion of goods transport connects with agricultural commodities. Demand for machinery used in agriculture like pumps and tractors would also go down and the demand for light consumer goods and for durables by the farm sector was also expected to fall. Brahmananda viewed that a 10 per cent drop in agricultural output would lead to a minimum of 10 per cent drop in the output in the non-agricultural sector. On the fiscal side, he opined that both direct and indirect revenues from agriculture would have fallen and the state government would have been forced to sue help from the centre for debt relief. He appears to have asked the RBI and the authorities to take proper policies with a view to protecting the vast masses of low-income groups.

In the Paper titled, ‘Alternative Structure of Investments’ (2002), Brahmananda speaks of the fundamental factors that have affected the working of the economy. According to him, even though some of the sectors like exports and software worked well, they do not represent the economy as a whole. He opines that the course of the entire economy, which could not be understood from mere surface indicators, should be looked at, that is, ‘a consistent macro-theoretical perception is necessary’. In this article, he laid a due importance on boosting long-term investment in infrastructure. He observes that this task has not been fulfilled by the private sector which has been given this responsibility since 1990s. Therefore, Brahmananda says, such an initiative should be taken by the public sector. He has directed a way to provide savings for the public
sector for long-term investment without being caught by revenue deficits. He suggested the banks to collect long-term fixed deposits by paying higher interest rates and even a subsidy on interest on certain types of fixed deposits and such funds be reserved for long-term investments.

In the article titled, 'Tenth Plan: Sky-High Projections' (2002), Brahmananda has criticized the Planning Commission's Approach Paper on the Tenth Plan projections calling them 'tall order projections'. He opined that for achieving 8 per cent annual growth rates over the Tenth Plan, gross savings, investment rates and incremental capital-output ratio were the major instruments. But, he opines that it is not an easy task to increase gross savings, investment rates by 30 per cent and 36 per cent respectively, which would involve measures of austerity in public and private sectors and a substantial increase in interest rates. He has listed the targets of the Plan and has considered the goals of reducing poverty ratio from 26 per cent to 21 per cent by 2007 and providing gainful employment to the additional labour force, to be vital. He has stated that the system in which economic issues have been pushed into the background, attainment of high growth rates would not come true, unless these issues become the 'central concerns of the system'. In conclusion, he has placed a due importance for investments in irrigation, desilting, flood control and says that long future requires long-term investments.

Proceeding further on the issues of the similar concern, Brahmananda, in his another Research Paper titled, 'The Tenth Plan Papers-Will Laudable Goals Get the Right Push?' (2003), appreciated certain features of the Plan, such as, the detailed attention to State Plans and regional imbalances in the economy.\textsuperscript{51} He has dealt with the Tenth

\textsuperscript{51} This article was passed by Brahmananda only hours before he passed away on January 23\textsuperscript{rd}, 2003.
Plan Document which was published by the Planning Commission in Three Volumes. He commented that the Plan Document did not pay any attention to the dominance of non-economic goals and the political uncertainties. He opined, "no plan of economic betterment could succeed when the socio-political processes introduce uncertainties and dilute the overall enthusiasm to bring about economic betterment. "