INSTITUTE OF ECONOMIC GROWTH

MEDIUM-TERM RESEARCH AGENDA

2006 – 2011

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OVERVIEW

'In-depth research for informed policy making'

The focus of research activities at the Institute of Economic Growth is detemined by faculty research interests within the broad themes, programmes and projects funded by the donor agencies. The Institute has evolved a tradition of applied socio-economic and demographic research which began with its founder, the Late Dr. V.K.R.V. Rao and has continued for about five decades now. Throughout the emphasis has been on " in depth research for informed policy making".

Currently, the Institute has 36 faculty members with an equal number of supporting research and administrative staff researching into three main disciplines of the social sciences, namely, economics, sociology and demography. All faculty members are supported by a specific research/training programme funded by a donor agency. The Indian Council of Social Science Research (ICSSR) gives a core maintenance and development grant to support the library and administrative infrastructure for research. ICSSR also supports the research on Social Change and Social Structure. The Ministry of Finance provides funds for training of the IES Probationers. The faculty supported by this Unit are free to choose any research theme in the broad area of economic development in India. The Post-Doctoral Fellows supported by the Sir Ratan Tata Trust Fellowship can choose any topic of research within the broad research agenda of the Institute.

Currently, the Institute receives regular annual research and training grants from the following sources:

The Ministry of Finance, Govt. of India,
The Ministry of Health and Family Welfare, Govt. of India,
The Ministry of Agriculture, Govt. of India,
The Indian Council of Social Science Research (ICSSR).

In addition, interest earnings from the following endowments grants support research in the Institute:

The Reserve Bank of India (RBI),
The Indian Planning Commission, Govt. of India,
The Ford Foundation, and the
Sir Ratan Tata Trust.

Some faculty members are supported by short and medium-term ad hoc research grants from various sources, notably among them, the Ford Foundation, the World Bank, the UNDP, the Population Council and the Canadian International Development Agency (CIDA).

The research themes and works thereon of the Institute faculty are periodically reviewed by the ICSSR, as well as by other funding agencies. All research themes as well as adhoc research projects are discussed and approved by the Academic Committee. The Board of Governors and the General Body of the Institute evaluate research work done by the faculty annually.

The Institute also prepares periodically, a Medium-term Research Agenda, typically for a five-year plan period. The Medium-term research agenda reviews the research done on a theme during the last five years and suggests the broad areas for research under each theme for the next five years.

After reviewing the research done at IEG in the light of socio-economic development and demographic transition in India and changes in economic and social structure and policies, the Academic Committee had suggested 9 themes for the Medium-term Research Agenda of 2003-08. These are as under:

1. Macro-Economic Analysis and Policy;
2. Globalisation and Trade;
3. Industry and Development;
4. Agriculture and Rural Development;
5. Environmental and Natural Resource Economics;
6. Population and Human Resource Development;
7. Social Change and Social Structure;
8. Health Economics and Policy; and
9. Labour and Welfare.

The above themes continue to provide the framework for this reassessment of the Medium Term Research Agenda for the period 2006-2011: it was felt that they represent adequately the structure of research likely to be undertaken in this period.

In particular, the faculty opined at the time of the last mid term review that the ongoing economic reform be analysed not only in relation to macro-economic policy but also in relation to agriculture, industry, globalisation and labour and welfare. Hence the need to mention economic reform under a particular research theme alone does not arise. In retrospect, that viewpoint has yielded rich dividends. The work of IEG has indeed viewed reforms from many perspectives.

The theme on macroeconomic policy and analysis covers research on both domestic macro issues and open economy macro issues. It also covers research on monetary economics, public finance, international finance and financial economics. The last theme, namely, labour and welfare was listed as a separate theme because it was felt that the faculty should devote special attention to the problems of poverty, unemployment and emerging social and economic conflicts and tensions in the process of economic reform. The Institute faculty have already undertaken and completed a number of studies on these and related issues in the earlier period.

It was also felt that the research on globalization should be broadened to include trade and emerging issues of World Trade Organization (WTO). It should also cover economic and social conflicts on account of globalisation both within the economy and externally. The cross-country experience on globalisation may also be studied under this theme. The research on health would now cover not merely policy issues but also broader aspects of the economics of health, medical care and ageing. Meanwhile the work of the Population Research Center is now looking more intensively at reproductive and child health issues among several other ongoing policy issues.

The research agenda in natural resources and the environment, similarly includes a variety of issues falling under the broad rubric of pollution management, resource and energy conservation, environment and development and the linkages between human well-being and eco-system services. Open economy issues and trade- environment linkages are being studied increasingly as well.

The detailed research programme under each theme is given in the subsequent sections.

It may be noted that while these above-mentioned nine themes detail the broad thrust of the institute's research in the medium term, the Academic Committee, if need be may suitably modify, or add or delete any theme depending on necessity.

Kanchan Chopra
Director
August 1, 2006

Theme I:
Macro-Economic Analysis and Policy

I.1 Research in the past five years

During last five years, a number of important macro studies on Indian economy and other developing countries have been completed by researchers at IEG working in the macroeconomics area. Two books and about 33 research papers have been published in international and national journals. One set of studies focused on economic growth, savings and investment where in-depth empirical research was carried out and academic papers published on the relationship between Economic growth and savings, Savings behaviour in developing countries, and Financial liberalization and its impact on interest rate and investment.

A few studies were carried out on growth and macroeconomic instability, factors affecting economic growth, growth and inflation, interest rate – price nexus macroeconomic projections, relationship between growth, fiscal policy and external balance, fiscal reforms and economic growth, forecasting economic growth and inflation, macroeconomic modeling etc. These studies have either been supported by funding agencies including ministries or individually initiated to derive policy conclusions on these important macro-economic issues.

The research on macroeconomic analysis has also emphasized on issues related to foreign direct investment, exports and growth. These studies include analysis of trends in export and relation between export and economic growth, FDI and Export competitiveness, FDI and technology transfer, impact of FDI on investment and economic growth, economic reforms in India and their impact on exports, FDI and its impact on growth and local investment and also on exports and imports

Since liberalization, there have been debates about the impact of reforms on poverty, employment and wages. Therefore, few studies were conducted on poverty, labour market, productivity and wages such as Job security and its impact on employment and wages, economic reforms and its impact on employment and wages, economic growth, poverty and inequality, growth and poverty in India and economic reforms in India and their impact on poverty.

Given the importance of multilateral negotiations at WTO and the provisions of WTO to India, a few studies focused on issues related Trade and WTO such as China's entry to WTO and implications for India and China, TRIPS and India's Pharmaceuticals Industry and EU Enlargement: Impact on India-EU Trade.

Another major area of activity has been the analysis of the developments in Banking and Finance. Thus studies like financial deepening in Asian countries: the role of interest rates and exchanges rates, relation between macroeconomic fundamentals and exchange rate, determinants of FIIs investment in India, integration of financial sector in India, structure of foreign exchange

market, Argentina Crisis: Causes and Consequences, Financial development in Asian countries and exchange rate behaviour have been conducted and results disseminated at different forums.

Some of the other issues taken up in the past include issues related to agriculture and development such as incentives, risk, and supervision costs in the choice of contractual arrangements in agriculture and moral hazard, monitorability and the choice of contracts.

Research will continue on most of the areas mentioned above. The future research agenda in detail is given in the next section. In addition, some of the on-going research areas are economic regulations and economic growth, impact of FDI liberalisation on employment and wages etc.

I.2 Research Agenda for the next five years

The future research at IEG on macroeconomics will cover most of the major issues relating to analysis of macroeconomic behaviour such as, savings and investment, banking and capital markets, growth and poverty, trade and foreign investment, planning and development, and issues related to Infrastructure. As in the past, the research will focus on in-depth and rigorous empirical analysis of these issues. The techniques of economic analysis are fast changing and the macroeconomic analysis at IEG has always attempted to update the existing econometric modeling work with the latest methodology, both time series and cross section, to arrive at robust and reliable results for policy suggestions.

Poverty is a serious policy concern in India. Thus the future research of the RBI unit would focus on analyzing the determinants of poverty in India with the objective of reflecting the positive impact of health, education and social welfare expenditures on alleviating poverty. Further, it would also look into issues such as improvements in infrastructure leading to reduction in poverty through increase in growth and/or access of the poor to education and employment opportunities, etc. The study would be extended to undertake causality analysis of the linkage between growth and poverty and growth and exports (and thus indirectly, between exports and poverty).

Unemployment continues to be a serious problem in India, particularly after the inception of structural adjustment programme initiated in 1991. Though there are few studies available, an in-depth empirical research on determinants of employment and wages has not been done in India. In this context, a future study plan has been designed to analyze determinants of employment and wages and the impact of economic liberalization policies on employment and wages. The study would focus on whether job security regulations in India have had any significant impact on employment and wages. The study will not only help to design policies related to unemployment and wages but also address the future of labour reforms, which is most debatable in the post-reforms era in India.

FDI undoubtedly represents the good side of globalization and it is more so for capital-scarce developing countries in south Asia. Though south Asian countries have been persistently

opening up their economies and giving investment incentives, South Asia, both collectively and individually, has been receiving very low FDI compared to other developing countries. Thus some researchers will focus on this front and critically analyze the policies and issues related FDI and empirically analyze the determinants of FDI in South Asian countries. Given the lack of infrastructural facilities in south Asian countries and the importance of infrastructure in attracting FDI, the study would examine the impact of infrastructure along with other relevant variables on FDI inflow in South Asia. Overall, the determinant analysis would help us derive policy suggestions to attract more foreign direct investment. The impact of FDI on host country economy is debatable and far from clear for south Asian countries. Therefore, the econometrics analysis would include a careful analysis of FDI impact on growth, investment and exports. Since south Asian countries have been following export-led growth strategy and trying to attract FDI to boost competitiveness in export sector and increase export, the study would examine the impact of FDI on Exports in south Asian countries.

Savings and investment are strongly correlated with GDP growth. Thus we plan to undertake careful time series estimations of savings and investment functions in India/ South Asia and causality analysis of savings-investment and growth linkage. Though RBI unit has already completed a few studies on savings and investment behaviour for Indian and Bangladesh in the past, the future agenda extends the study for other south Asian countries like Pakistan, Bangladesh, Sri Lanka and Nepal and panel data studies across a number of countries.

Share markets can be an important source of funds to the industry but remain underdeveloped in India, partly due to the frequent scams and crises. We plan to analyze issues such as determinants of the market (or index) prices, determinants of the price equity ratio, impact of foreign institutional investments, etc. From this study we will also try to suggest measures for ensuring improved stability in the market.

The future agenda would also focus on modeling foreign exchange reserves to find optimal level of foreign exchange reserves for India. The study would help us to address the debatable issue of cost-benefit analysis of holding huge foreign exchange reserves.

Export growth is crucial to maintaining the high economic growth in India. Thus RBI unit proposes to undertake a careful econometric estimation of the determinants of exports in India. The study of export-growth linkages would be extended further to include south Asian countries. Moreover, the study of other successful developing countries following export-led growth strategy would be taken up to draw lessons for India and South Asia.

The role of infrastructure on growth and overall development has been well established. Given the low level of infrastructure facilities and low private participation of private sector in infrastructure, the future research agenda would ideally comprise of analysis of infrastructure facilities, problems and prospects.

One of the major research activities of the IEG (at its Development Planning Centre) is

modeling macroeconomic behaviour and forecasting. The analysis of forecasting macroeconomic behaviour through both the structural model and the time series model would continue. The focus would be on analysis of results of counter-factual simulations for both past and future to evaluate ongoing macroeconomic reform. Another important research agenda includes the analysis and forecasting of macroeconomics trends based on monthly data through Bayesian behaviour and shocks. This is important to develop an Early Warning Model to give timely warnings on exchange rate and foreign exchange reserves crisis and other shocks. For this, experiments would be made on the basis of the Bayesian Vector Auto-Regression (BVAR) model. It is hoped that after this, the model can not only predict turning points and cycles correctly but would also give timely warnings of shocks such as those that destabilised the Indian economy from time to time in the past. Simultaneously, efforts would be made to analyse the behaviour of stock markets and other financial markets. A major extension of econometric modelling and forecasting would be to forecast growth and inflation at the state level. The DPC has already completed forecasting growth of state domestic product (SDP) and inflation initially for three states, namely, Andhra Pradesh, Karnataka and Uttar Pradesh, and plans subsequently for other major states.

The existing IEG model has achieved a degree of maturity. There is, however, scope for a number of extensions that are necessary to make this model more robust and more useful for policy analysis. The problem with using a model for both forecasting as well as policy analysis is that more aggregated and smaller models are usually more useful for making forecasts with low errors, while policy analysis frequently needs more disaggregated and hence, larger models. A solution to this problem lies in constructing a core model and a number of subsidiary models each of which focus on a specific sector. The core model has a higher level of aggregation and is used for forecasting major macro variables. The subsidiary sectoral models can be constructed at a more disaggregated level, and can be attached to the core model for specific policy analysis. Such subsidiary or satellite models are becoming increasingly important due to global and national developments. We have to undertake a much larger exercise to develop the subsidiary models that can be attached to the core model whenever necessary. Development of the satellite or sectoral models involves addressing theoretical questions of appropriate levels of aggregation and time horizons in view of data availability and identification of significant links to the core model.

The changing scenario in the country and the changing state of the art also necessitate extensions of the theoretical basis of the core model. Some of these are: (i) Structural changes are taking place in the economy that need to be incorporated in the model and (ii) Certain elements of the reforms process need to be looked into in greater details and more useful ways of reflecting the various kinds of reform measures have to be incorporated in the model.

There are significant problems in shifting to more recent estimation techniques like co-integration etc due to lack of adequate time series data. However, more data will be available in future and there is a need to initiate an exercise that will attempt these estimation processes in future.

Along with macro-econometric modeling, the macro analysis at DPC has examined other kinds of models. The future research agenda shall also carry forward this work. These include: (I) Time-Series based modeling Programmes and (ii) A Computable General Equilibrium (C.G.E) modeling exercise for specific objectives of planning.

Apart from econometric modelling the faculty would continue to analyse factors determining the volatility of interest rates in the open economy macro model and open economy macro behaviour. Some of these studies would be based on cross-section data from emerging countries, especially in the East Asian region.

Theme II:
Globalisation and Trade

II.1 The Last Five Years: Studies Completed

During this period three books and about 20 research papers were published under the theme ***Globalisation and Trade***. The research papers were published in journals such as *The Journal of Development Studies, Research Policy, Journal of Development Economics, Applied Economics, Journal of International and Area Studies, Journal of Developing Areas, The Information Society, The Journal of International Trade and Economic Development,* and *Economic and Political Weekly*.. In addition about 6 studies have been completed and they await publication. The completed studies could be grouped under the following heads:

I. Global Business, Multinational enterprises and Technology Transfer

These studies discusses the following issues:

- The kind of foreign direct investments (FDI) that countries like India are likely to attract in the World Trade Organisation (WTO) regime, namely, market seeking or efficiency seeking investments;
- The role of FDI in research and development (R&D) – its consequences for technological capabilities of the less developed countries (LDCs);
- The relationship between technological imports and in-house R&D activities – are they substitutes or complementary;
- The choice between international joint ventures, licensing and buy-out decisions;
- Different modes of technology transfer by multinational enterprises (MNEs) – intra-firm transfer through FDI, arms length licensing of disembodied technology, and transfer of embodied technology through export of capital goods;
- Location advantages and FDI;
- Presence and performance of MNEs in East Asian countries like Thailand, Malaysia, and South Korea.

II. Globalisation and Small Scale Industries

- Impact of liberalisation on small scale industries;
- Technological change in small scale enterprises;
- E-business and small and medium enterprises;

III. Technology, productivity and Globalisation

- Liberalisation, technology and efficiency of firms;
- Information technology, productivity and growth;
- Globalisation, productivity, efficiency and growth;

IV. MNEs, Technology Transfer and Exports

V. Mergers and Acquisitions

VI. Comparative Asian Studies – ASIAN, China and India

- IT software and hardware: China – India comparison;
- Regional Distribution of FDI: China – India comparison;
- Investments in East Asia;

II.2 PROPOSED RESEARCH

It is proposed to continue research on the six themes mentioned above. While continuing with the earlier themes we also propose to work on issues relating to:

- Liberalisation and Employment

It is often argued that developing countries import technology from the developed countries which do not suit their requirements, particularly in relation to the objective of labour absorption on a large scale. The process of globalisation is expected to have eased the flow of technology and knowledge across countries. Hence, the fear is that employment growth may not rise in the developing countries with the large scale import of technology from abroad. However, the alternative view is that there can be complementary relationships between domestic and foreign technology and hence, the positive benefits of globalisation are noteworthy. It is proposed to examine this issue in detail.

- FDI Determinants and its impact: South Asian Perspective

Though south Asian countries have been persistently opening up their economies and giving investment incentives, South Asia, both collectively and individually, has been receiving very low FDI compared to other developing countries. Thus research on this front will critically analyze the FDI policies and issues and empirically analyse the determinants of FDI in South Asian countries. Given the lack of infrastructural facilities in south Asian countries and the importance of infrastructure in attracting FDI, the study would examine the impact of infrastructure along with other relevant variables on FDI inflow in South Asia. Further, impact of investment incentives and investment treaties on foreign direct investment in south Asian countries would be analysed. The impact of FDI on host country economy is debatable and far from clear for south Asian countries. Therefore, few studies would be taken up in future to analyse quantitatively

the FDI impact on growth, investment, exports and employment. Since south Asian countries have been following export-led growth strategy and trying to attract FDI to boost competitiveness in export sector and increase export, the study would examine the impact of FDI on Exports in south Asian countries. There is also a scope to carry out research on issues such as Labour reforms as a major determinant of FDI in South Asian countries and also on Employment related FDI strategy in countries like India where unemployment problem has been persistent for several decades.

- India-ASEAN Free Trade Area

It is proposed to study the impact of India-ASEAN FTA on trade flows and domestic industries in India. The impact of the India-ASEAN and China-ASEAN FTA on FDI flows especially FDI flows from Japan and ASEAN countries is another aspect that would be studied.

- Restructuring of Produce Lines in Response to Import Liberalisation

Theme III:
Industry and Development

III.1 Studies Completed, 2000-2005

Research on Indian industry done at the Institute during the last five years can be grouped broadly under the following six heads:

(i) ***Productivity and Competitiveness***: Studies under this group addressed the following issues: total factor productivity growth in Indian industries in the pre- and post-reform period; the effect of import liberalization on industrial productivity; interrelationships among competitiveness, participation in trade and size of the industrial units in the organized industry; inter-regional variations in industrial productivity; decomposition of total factor productivity growth in industries into technological progress (regress) and changes in technical efficiency; the role of infrastructure in explaining variations in total factor productivity growth and technical efficiency; the effect of agglomeration economies and external economies of scale on industrial productivity performance and competitiveness; assessment of the effect of agglomeration economies as manifested in technical efficiency of firms in cotton textile and electrical machinery industries, and the role agglomeration economies can play in facing the challenges posed by globalization and competitiveness.

(ii) ***R&D, Technology Imports, etc***.: Studies dealing with R&D activities in Indian industrial firms examined the determinants of R&D behaviour and the effect of government policies on R&D intensity, particularly, the impact of economic liberalization. Some other studies belonging to this group dealt with imports of technology. These studies *examined the effect of technology transfer on the export performance of industrial firms, the role of technology acquisition in explaining inter-firm differences in the growth of capital stock, the effect of technology imports on employment in the engineering firms, and the interdependence among technology imports, growth, efficiency and the export performance of the Indian engineering industry*. A series of studies were undertaken with a specific focus on information technology. The main issues examined by these studies are the determinants of the adoption of e-business technologies in the manufacturing sector in India, and the impact of the adoption of information technology on the behavior of Indian television manufacturing firms.

(iii) ***Small-Scale Industries***: This group of studies covered various important aspects of small-scale enterprises in India. The issues covered in the studies include the performance of small-scale industries in the changing business environment due to globalization and liberalization of economic policies, importance of technology and the role it has been playing, and factors constraining technological up-gradation and competitiveness in the small scale industries in India.

(iv) ***Openness, wages, employment and price-cost margins in Indian industries***: The impact of economic reforms particularly the impact of openness on employment in manufacturing industries was studied. A particular question investigated is whether openness has led to an increase in employment elasticity. Another set of studies investigated the effect of trade liberalization on wage rate and price cost margins in Indian industries. The labor market conditions, particularly bargaining power of trade unions, has been examined as a possible factors explaining the sluggish growth in real industrial wages in the post-reform period.

(vi) ***Other Studies including on specific industries such as automobile industry***: Many other aspects of Indian industries have been covered in the studies undertaken in the last five years. These include: growth of Indian industry during the 1980s and 1990s; the relationship between productivity and wage, particularly how far productivity advances have been translated into wage gain for workers in organized industrial sector, corporate investment behaviour; the effect of technological progress on employment generation in Indian industries, and the impact of industrial performance on incidence of poverty in different Indian states.

Several studies were undertaken with a specific focus on India's automobiles industry. The issues examined include: the effect of policy liberalization for the Indian automobiles sector on elasticity of scale, technical progress and total factor productivity; the effect of technological change on factor substitution and employment generation; the effect of liberalization on the strategy of growth of the firms; and the influence of government policies on demand for cars and commercial vehicles in India in a comparative perspective of the experience of developing countries.

III.2 Research Plans 2006-11

Some of the major topics of research on Indian industry in the past five years will continue to be in the research portfolio for the next five years. Several new topics or areas will be added. The main topics of research proposed for next five years are given below:

1. Impact of Economic Reforms on the Market Structure and Performance of Indian Organized Industry

Economic reforms were undertaken in the 1990s essentially to instil dynamism in the industrial economy through competition. Competitive forces are expected to take Indian industry out of inertia and place it on a dynamic growth path. In this context, it is important to know how far economic liberalization and globalisation have succeeded in changing the market structure so as to allow more competitive free play. Market competition is in turn expected to influence the performance of industry positively. It is proposed to study changes in the market structure for different industries in terms of the number of units, size structure and ownership patterns in the 1990s as compared with the 1980s, using unit level data for the organized industry. The inter-temporal and inter-industrial variations in industrial concentration will be analyzed to identify key determinants of market structure in Indian industries. This is to be followed up by a study of the performance of industrial units / industries in terms of efficiency and productivity

and how this is related to the policy reforms and market structure. A related question to be examined is how has the new economic environment influenced the entry and exit of firms, their competitive strategies, and their pricing behavior.

2. Reforms and the Corporate Sector

The corporate sector constitutes a dominant part of industry. Financial sector reforms along with the development of the capital market are changing the structure of corporate financing. This has led to a separation of ownership and the management and has given rise to the issue of corporate governance, among others. Corporate governance essentially deals with the ways of governing the corporations so as to improve their financial performance. The need for governance arises mainly due to the divergence of interests of different constituents of corporations like shareholders and managers, which offers scope for mismanagement and misappropriation of funds. This is important because poor performance may lead to corporate bankruptcy. Mismanagement leading to corporate bankruptcy has become an important issue in many economies including the developed ones. In this context, it is proposed to carry out a study on the issues of corporate financing, corporate governance, and corporate performance / bankruptcy using firm-level data.

3. Openness, Labor Market Reforms, and Wages and Employment in Indian Industries

The impact of openness and labor market reforms on wages and employment in industries will continue to be a research theme in the coming years. The issues to be investigated include: the contribution of exports and imports to growth of output in different industries, the effects of India's openness to trade and technology imports to growth of employment and wages in different sectors of the economy, how far labor market reforms can help in creating a favorable investment climate for industries and thus cause faster industrial growth and more employment.

4. Disinvestment and Industrial Performance in India

It is proposed to examine the process and extent of disinvestments in India in the post-reform period. A particular question of interest is whether or not there is a better performance in the divested Public Enterprises (PEs) in India and the extent of such betterment in performance. Performance is to be considered with regard to profit margin, growth of investment and output, technological development and growth of productivity, employment and the inverse of debt-equity ratio. It has to be further examined whether higher profitability, if any, is because of greater monopoly power after disinvestments.

5. Structure of Specific Industry e.g. Food Processing Industry

As a part of the studies on industrial structure, a specific study on the structure of food processing industry in India will be undertaken. Changes in the structure of food processing industry will be examined in terms of relative shares of organized and unorganized component, size distribution, investment pattern and other structural parameters of the organized industry.

6. Mergers and Takeovers

Mergers and takeovers have become an important phenomenon of Indian industry after the reforms. There has, however, been very little research on this topic in the Indian context. A study of mergers and takeovers among Indian industrial firms is therefore proposed to be undertaken, with a particular focus on how the merger /takeover affected the performance of industrial firms.

7. Industry-Urban Nexus

Studies will be undertaken on industry-urban nexus exploring the possibilities of productivity-augmenting effects of urbanisation on industries, and thus enhancing the competitiveness of firms located in large urban settlements relative to their counterparts in medium sized and small towns. Besides, the associations between infrastructural investment and industrial concentration, and the possibilities of convergence are to be looked into. Research in this field would constitute questions relating to methodology as well as analysis.

8. Impact of Technological Progress

Economic reforms have created a condition in which firms are under great pressure to improve their technology. In this context, studies are proposed to be undertaken on the impact technological changes have on industrial firms in India. Particular issues to be examined are: the effect of technological change on labour market, and the contribution of technological change to growth of firms. A major focus of research will be on the effect of adoption of information technology on productivity, competitiveness and employment generation in Indian industries.

Theme IV:
Agriculture and Rural Development

IV.1 The last five years (2001-2006)

Research undertaken in the field of agriculture in the last five years (2001-2006) can be grouped into following sub-themes.

1. Agricultural Growth, its sources and determinants: and the role of public sector investment vis-a vis subsidies

The studies related to growth in agriculture find that income growth in agriculture during '90s is more because of value additions in agriculture; total factor productivity growth in the high productivity region of the country has in fact declined during the period. Such pattern of growth in agriculture has its implications for employment and poverty in rural sector. A study about determinants of growth in agriculture suggests that poor agricultural growth in recent years is because of slow down in public sector capital formation and decline in terms of trade for agriculture; the study suggests diversion of resources from subsidies to pubic sector capital formation in agriculture to step up growth in agriculture.

There have been concerns about decreasing public investments in agriculture in the recent decade. One of the IEG study re-examines concepts of public investments in agriculture, the study besides including the CSO's existing head of agriculture also includes those public investments which are meant for agriculture. Examples of such investments are public expenditures in agricultural research; part of Government investments in power sector is also meant for agriculture since agriculture accounts for around one-third of power consumption in the country. The study finally concludes that with broader definition public investments in agriculture has increased.

The issue of farm subsidy is important in regard to its implications for efficiency, equity, and public investments in agriculture. Any reforms in farm subsidies would have significant effect on the prices of farm inputs and its use. In this background an IEG study estimates econometrically distributive impact of withdrawal of farm-input subsidies. The results show that increase in fertilizer prices does not impact its use for small and marginal farmers, provided adequate infrastructure like irrigation is there and farmers have access to institutional credit.

2. Trade and WTO Related Issues in Agriculture

Implications of World Trade Organisation (WTO) for Indian agriculture have drawn research attention in recent years. Faculty of this unit has contributed significantly to the above topic. Research on India's agro-export potential identifies commodities wherein the country has a comparative advantage. The study argues that exports under liberalized environment require

efficient growth merely output growth is not sufficient. The study finds sufficient scope of increasing efficiency in the post harvest operations of agricultural commodities. A study on globalising Indian agriculture examines changes in domestic agriculture following liberalization. The study identifies winner and loser crops and also explores profiles of the winner crop cultivators. The study finds that winner crops use resources more intensively; intensity of resource use further increases with the size class of farmers.

There is now sufficient evidence to suggest that implications of WTO agreements related to agriculture would vary across commodities; therefore some commodity specific studies are also undertaken in the unit. Research on urea suggests limited imports of urea for the country; import options have to be in commensurate with the domestic market dispensation. The study suggests that as long as urea remains cost heterogeneous, tariff-rate-quota would be the right way of protecting domestic urea industry. Effect of import liberalization of milk and milk products on domestic constituents is assessed in a partial equilibrium framework. The study finds that occasionally low world price may become inimical for domestic producers since loss of employment following duty-free-imports at such a low price is enormous, though this import option increases consumers' benefits and also aggregate benefits to the country. These studies finally discuss some ways to protect the long run interest of the country.

3. Technology and Sustainable Use of Resources

There have been some researches related to sustainable use of resources. With the emerging scarcity of water in a large part of the country, importance of water saving technologies increases. One of the IEG studies evaluates potential of various water saving technologies like drip and sprinkler irrigation system. The study finds that in orchards investments in drip irrigation results in a very high benefit-cost ratio. It also evaluates potential of water saving cultural practices like intermittent submergence of paddy; findings of the study suggest that in spite of high social pay-offs adoption of such cultural practice is restricted since this does not result in private gain/ benefits for farmers.

With the adoption of intensive agricultural practices there are evidences of degradation in physical and chemical properties of soil. Conjunctive use of chemical and bio-fertilisers is often recommended for maintenance of long-term productivity of soil. Research to assess financial implications of such a change in the use of fertilsers has been undertaken in the unit. Econometric analysis suggests sufficient reason for conjunctive use of chemical and bio-fertilisers on farmers field. The greatest constraints to the conjunctive technology however come from the inelastic supply of organic manure, lack of organized market leading to wide price variations of organic manure. The study finds that bio-fertilizer is still in the realms of 'infant industry' and needs proactive promotion from government.

4. New Institutions for Growth and Equity and the Role of Credit

In an opening economy equitable growth in agriculture requires certain kind of institutional reforms. A study on institutional aspects of resource management looked into market and non-

market institutions. Participatory approach to resource management is evaluated in different contexts; some of these are in relation to the management of canal irrigation and in particular participatory irrigation management.

Research on *rural credit system* identifies problems associated with rural credit institutions in the country. The efficient way of rejuvenating formal rural credit institutions has been worked out by studying the non-performing assets of the rural credit institutions. The potential of micro-finance in resolving some of the problems of rural credit in India is also assessed.

Contract farming has emerged important in recent years; research on contract farming analyses alternate models of contract farming in the framework of small *vis-à-vis* large farms in the state of Punjab. The study finds that direct contract is more effective as compared to the indirect one. Findings of the study indicate superiority of contract holder over the non-contract ones in average crop productivity; this superiority in terms of gross value additions and farm income is however less. Inspite of the above merits of contract farming, the system is more tilted towards medium and large farmers.

5. Rural Development, Non-Farm Employment and Infrastructure

With the increased pressure on land importance of non-farm activities increases in rural development. A study investigates pattern of non-farm employment in rural sector with the help of secondary and primary data. The study finds that in rural India employment and quality of employment deteriorated at the aggregate level; disaggregate level figures show that both push and pull factors have contributed to rural non-farm employment growth; process of rural diversification in either of the situation is however different. The study finally discusses strategies to increase productive employment in rural sector.

Importance of *infrastructure in rural development* cannot be overemphasized. A study on rural infrastructure categorises states on the basis of a composite indicator of infrastructure. It examines implications of rural infrastructure for agriculture and farm income of the selected regions. One of the IEG studies investigate into rural-urban disparity in the State of Uttaranchal. The analysis of secondary data reveals skewness in favour of plain and more urbanized districts; this also shows disparities against rural sector in various economic and social indicators. Interestingly, rural urban inequality as measured with consumption expenditure has decreased in the study area, school education also dispersed successfully towards remote and rural areas. The primary data also show disparities in education, health, quality of life and income; problem of unemployment has been more severe among rural people. The study argues that government has rightly prioritized physical infrastructure and sun-rise industries in the state; the quality of education and health facilities however needs immediate attention.

Women Entrepreneurs in the new scenario: There are evidences to suggest that unemployment and poverty affects rural women more adversely. Sometimes government programmes are targeted towards making them self reliant; training rural women for selected entrepreneurship

is one of such programmes. An IEG study evaluates performance of rural enterprises for women across the country.

IV.2 Medium Term Vision: The Next Five Years

A number of newer areas of work have emerged, mainly out of the expanding interest and expertise of existing faculty members, as also the requirements of policy formulation by the Ministry. The following areas of work are likely to receive attention in the next five years:

1. Crop- Forecasting using Remote Sensing Data and Econometric Techniques

The need for more accurate forecasts of crops is being realized in the country. Though there are several techniques of forecasting, faculty of this unit are interested in econometric methods of forecasting. Time series or structural equation based forecasts for individual crop will be undertaken at the aggregate level and also for important states of the country. The structural equation based crop- estimates though require lot of information are important to assess implications of some government policies on crop production as well. A project is being developed on these lines in consultation with the Ministry of Agriculture.

2. Rural Diversification and its growth and employment potential.

The earlier work on non-farm sector employment will be pursued further. Employment growth in non-farm sector is important for development of rural sector. Manufacturing is one of the most important rural non-farm activities and higher growth in this industrial category is important for robust growth of rural economy. Again agro-processing is one manufacturing activity wherein rural sector has certain advantages; research to evaluate performance of agro-processing in recent decades is being pursued. Much of the development of rural sector also depends on certain kind of infrastructures. Studies related to infrastructural development of rural sector would therefore be prioritized in the unit.

3. WTO and Indian Agriculture

The current round of WTO negotiations and future rounds of talk may pose certain challenges and opportunities for Indian agriculture; this needs to be assessed on a continuous basis taking into account strength and weaknesses of the country. Researches in this unit would continue to examine this area with an aim at preparing India's agriculture sector in the emerging international trade order. The challenges and opportunities for country often vary across commodities; therefore sector and commodity- specific studies assessing potential, possible threats and likely response of the country would be pursued in the unit.

The issue of efficiency and equity is extremely important for India. Efficiency and equity related problems in Indian agriculture primarily depend on the state of technology and status of natural resources in that region. These factors vary across regions therefore region specific

studies in relation to long-run efficiency and equity of agriculture would be important for the researchers of this unit. One of the on-going study attempts to assess implications of domestic reforms on agricultural development of the North-west India.

4. lkThe Role of Crop Insurance and Other Alternative Institutional Arrangements

The existing institutional framework for agriculture and rural development has often been found inadequate; role of alternate institutions is therefore increasing in a liberalising world; encouragement to such institution sometimes also requires reorientation in existing public institutions. One of the ongoing studies in the unit is about evaluation of crop insurance programme in the country. Such studies emphasize need for evaluation of existing and new institutions in a dynamic framework; faculty of this unit would be interested in undertaking such studies.

Theme V:
Environmental and Natural Resource Economics

V.1 The last five years: 2001-2006

In the last 5 years, a large number of researchers at the IEG have ventured into different aspects of environment and natural resources management, which can be summarized under the following broad themes:

1. Institutions and Instruments for Environmental Management:

One major area of research has been an analysis of institutions and instruments for management of the environment, both as a resource and as a sink for pollution. Different methodologies were used for the estimation of pollution abatement cost functions in the context of the Indian industry.

Another theme has been urban environmental issues such as *air pollution, health impacts of unsafe drinking water* and the emergence of new modes of governance which take into account peoples' willingness to pay for these services Studies examining different aspects of air pollution were undertaken for major cities in the country.

Emerging formal and informal institutions (both in the urban and rural contexts) and the synergies and contradictions that they represent in relation to development with environmental conservation have also received attention. Research in Industry- environment interface included the areas like

- Effects of environmental controls on business strategy
- Environmental regulation and R&D by firms
- Environmental information disclosure
- Dealing with multiple conflicting regulatory regimes (across states)

2. Human Well-being and Eco-system Services:

During 2001 to 2005, the IEG participated in the Millenium Ecosystem Assessment,a four year international initiative sponsored by the United Nations, its Faculty playing an important role in designing and implementing the Conceptual Framework within which the study was conducted. By virtue of this, the valuation and assessment of the links between human well-being and ecosystems formed a major focus of its research.

Alternative approaches to the valuation of resources such as wetlands, water bodies, forests and biodiversity-rich national parks, and bio-prospecting and sharing of benefits accruing them from were also studied. A large number of these studies were augmented by applications in India, which constituted pioneering applied work in the area.

3. Governance, Collective Action and Equity in Resource Management

In the rural context, issues of environmental governance and collective action continue to be a central focus with the emergence of community forestry and water management groups in South Asia. For instance, some questions being focused on are: How participative are these institutions? Is there a typology of participation? To what extent does inequality of different kinds impinge on prospects for cooperation and environmental sustainability? How best can we understand the process of exclusion and inequality creation and its impact on new forms of environmental governance? Many of these questions are also being examined from a political economy and gender perspective. Another thrust area, spearheaded by colleagues from the sociology section, is social ecology studied from the perspective of the newly emerging forest management institutions.

A new perspective to the study of common pool resources was also explored. Their role as drivers of development through market linkages was focused on in a major project which examined the interlinkages in Himachal Pradesh

4. Trade, Environment and Rural Poverty

An IEG study examined the interlinkages between trade, environment and rural poverty in the Sundarbans region of West Bengal. The impact of increasing exports of shrimp on well-being of different stakeholders and of the consequent expansion of aquaculture on land and water ecosystems was studied using innovative techniques with time series data on biodiversity indices and land use changes

5. Natural Resource Accounting

IEG was part of several initiatives in this area, including a CSO initiative aimed integrating natural resource accounting into the system of national income accounts using, to begin with, satellite accounts and state level studies. This set of studies resulted in several methodological extensions with policy implications as well.

V.2 Medium-term Research Agenda: the next five years

The medium-term agenda for work under this theme is envisaged both as a continuation of work undertaken in the near past and as a venturing into select new areas of faculty interest. The following areas and themes of work are identified

1. Urban Eco-systems and environmental management

In the medium term, one sees the emergence of urban environmental management as an important area of work. This will constitute in part a continuation of work on drinking water and air pollution. A new facet of this work on urban environments is its geographic widening to cover countries in South Asia other than India. Further, from the conceptual viewpoint, it is proposed to analyse urban environments from an eco-system perspective.

2. Corporate Social Responsibility and the Environment

The effect of pollution control activities on industrial performance and the impact of environmental regulation on technological change in industry is another proposed area of work. This falls within the theme of corporate environmental management. What are the challenges facing the corporate sector in a situation of increased consumer awareness of environmental issues and how does industry respond to them? These are significant issues for research in a globalising era when Indian consumers' preferences can demand compliance with international environmental norms and standards. Exporting concerns shall anyway have to abide by environmental standards. What shall be the effect on industry's competitiveness and its profitability? Further, what will be the corporate sector's response? In this important research area the IEG can play a leading role.

3. Common Pool Resources and Eco-system Services

Effective response strategy to management of ecosystems like Payment for Ecosystem services is going to be one of the major focus areas in research priority at IEG in the future.

Further, common pool resources as the source of eco-system services constitutes another fruitful area of future work. This approach takes forward the work on valuation and accounting of ecosystem services to take into account trade-offs between different kinds of services such as provisioning, regulating and enriching provided by eco-systems. However, this involves carrying forward in a more sustained fashion, the inter-disciplinary approach to work, which has so far been initiated in a limited way through ongoing projects. Undertaking research in trans-boundary management of resources between countries in South Asia could be another possible extension of this dimension.

4. Environmental Governance and Civil Society

Environmental governance and the study of diverse formal and informal institutions enabling this governance underlies several aspects of planned and ongoing work. One faculty member explores "environmentalism" as a specific form of social change that results in particular and novel forms of appropriation of resources by interest groups. The conceptual and discursive aspects of environmentalism, the responses of civil society organizations, and the agency of people whose livelihoods are displaced under the agenda of environmentalism are areas of interest. Another colleague is exploring how environmental outcomes might be a result of differential bargaining power between people situated in different socio-economic and environmental contexts.

Different kinds of inequality that permeate social structures (such as class, caste, gender, etc.) can also have an impact on the processes which determine the trade-offs between services provided by the environment and the value that is placed on them. This has been a recurring theme in the work of IEG and shall continue to be so.

Additional new areas into which IEG researchers could venture, given appropriate and extended funding support are: climate change and its impacts, issues at the interface of Law and Economics and Global Environmental governance

Theme VI:
Population and Human Resource Development

VI.1 Retrospect (Research during 2001-06)

During the last five years, the research in the PRC focused on the following broad subjects.

1. ***Studies on measurement of demographic and health indicators*** like fertility, mortality (particularly maternal and child mortality), morbidity, contraceptive use, reproductive tract infections (RTIs), and sexually transmitted diseases (STDs), etc. had been undertaken at national and sub-national levels. The trends, differentials and interrelationships with socio-economic variables of these indicators have also been studied. Some studies have focused on unmet need of contraception and unwanted fertility, and the factors affecting unintended child bearing.
2. ***Several studies on quality of care in Delivery of Health and Family Planning Services*** and quality of data from census and registration data generated by the civil registration system has also been undertaken during last five years.
3. ***Several studies have evaluated population policies and programmes,*** with a particular focus on accessibility, outreach and the quality of reproductive and child health care (RCH), especially in demographically backward states of Uttar Pradesh and Uttaranchal. Another study, published in the form of a book, studied linkages between demographic parameters and critical components of RCH care. The predictors of RCH in Northeastern states have also been identified in another study.
4. ***Population, development and environmental linkages*** have also been examined in some studies. Ill health effects of ambient air pollution in Delhi, Kolkatta and Kathmandu has brought out interesting linkages between health, environmental degradation and associated socioeconomic factors.
5. ***Gender inequality in the ownership and control of property and implications of this bias on women's economic well being, social status and political voice have been studied.*** There are also studies on participatory exclusions, community forestry and gender.
6. ***The problem of ageing and the health and social security needs of the elderly*** have been studied by a series of studies, which are published in a form of a book. Public response to old age income security, health and livelihood issues, and activities of daily living (ADL) disabilities has also been studied.
7. ***A study was completed on 'demographic bonus' for India***. This phase of population structure precede the 'graying' of population and provides a 'window of opportunities' for a country to take-off to a higher economic growth path.
8. ***A comprehensive study on demographic perspective of falling sex ratio is completed.*** This study examined the decline in sex ratio since 1901, by disaggregating the trends by age groups, geographical regions and social groups. Data from census and SRS has been examined.

9. ***Other studies include: one on determinants and utilization of prenatal diagnostic technologies and sex ratio; one on the subject of spousal violence in relation to property ownership; socioeconomic and demographic causes and consequences of migration; and on Demographic transition in different religious communities.***

VI.2 Research Agenda For 2006-2011

There will be continuation and consolidation of some of the research subjects that have been pursued by the PRC Faculty over the last five years. Besides, some of the new areas of research interest will be explored during the next five years 2006-

(i) ***Studies on demographic and epidemiological transition and its implications for population stabilization goals*** Socio-economic factors impacting basic proximate determinants of fertility and population stabilization would also be carried on.

(ii) ***The linkages between reproductive and child health, fertility and contraceptive use.*** The secondary data from the NFHS, RCH, SRS, NSS and service statistics from the Ministry of Health & FW and the Census data shall be used for this. ***Research studies on RCH, RTIs/STDs, HIV/AIDS and related issues***

(iii) ***Studies on gender justice, and gender dimensions of the environmental governance and collective action*** in the management of common pool resources, such as community forests, through creation of local level institutions will be pursued.

(iv) ***The role of effective land rights for women in the livelihood security of the poor and in women's empowerment***, and exploration of the new ways by which poor women's land access can be enhanced will continue to be subjects of study.

(v) ***The study of changes in age composition of population and societal ageing*** will continue to be one of the important areas of research.

(vi) ***The study of functional health of older persons*** assumes importance in view of considerable disease burden in the country. There are fairly higher chances of poor old age health pushing a large fraction of older persons to suffer functional incapacitations and filial dependence. This will be the new area of research that is proposed to be pursed.

(vii) ***An examination of prospects of offshore migration by skilled labor force*** of Indian origin (given India's age-education advantage in a paradigm of global ageing) The ultimate objective of the study will be to draw a strategy for development of human resources.

(viii) An extension of existing studies of the changing structure of population, particularly the sex structure, as a result of widespread use of the techniques of sex selection and consequent female feticide is planned.

(ix) ***The spatial pattern of urbanization in relation to economic development*** using census and other secondary economic data generated during nineties.

(x) ***Adolescent reproductive and sexual health*** will be pursed for research at micro-level for policy and programme formulations. The consistently high rate of adolescent childbearing in India is an issue of concern to policy makers because of serious negative social, economic and health consequences associated with early pregnancy.

(xi) ***Quality issues in abortion care*** is another subject that need priority research attention from the point of policy and programme in view of the high incidence of abortion having adverse influence on the health status of women in India. Studying the health seeking behavior of women particularly for utilization of abortion services has become very important for policy makers and health managers. Research will be pursed on these issues.

(xii) ***A survey of the policy environment in selected states of the country in the context of demographic transition*** the policy environment. Currently, little is known about the prevailing policy environment in good performing and poor performing states. An indicator-based approach will be adopted for the survey.

(xiii) ***Political mapping of population and reproductive health issues*** is important in the sense that, at present, population stabilization and health transition efforts are largely driven by the bureaucracy as the political class feel shy of discussing and debating these issues in the context of social and economic development and quality of life of the people. The research being proposed will analyze the inter-state as well as within state differentials in the political map of population and reproductive health issues. This political map is expected to provide some very useful inputs to population and reproductive health policy formulation and related planning including resources allocation. A sample of states, districts, development blocks and village panchayat will be selected for the proposed research. The collection of information will be based on the direct interview with the selected people representatives on the basis of the survey questionnaire that will be developed and pre-tested in advance.

(xiv) ***Child survival*** remains a major challenge towards demographic transition in the country. The inter-state and inter-district disparity in child survival in India has persisted over time despite all child survival programmes and activities. This research will lead to a monograph on child survival in India using the data available from various sources including population census, sample registration system, National Family Health Survey, household level survey under the Reproductive and Child Health Programme and various other studies on child survival and its determinants.

(xv) ***Maternal health*** has been a neglected area of research in India despite the fact that the risk of death due to complications of pregnancy and delivery remains exceptionally high in many parts of the country. Traditionally, maternal health has always been associated with child health at the policy level. It is only recently that there has been a focus on maternal health issues in the context of reducing maternal mortality and morbidity. The proposed research will concentrate on the analysis of maternal health situation and maternal health issues in the country and in its constituent states and Union Territories through a policy perspective. The analysis will be built up on a comprehensive analysis of the available data and linking the findings of the analysis with the maternal health policies from time to time.

Theme VII:
Social Change and Social Structure

VII.1 The Last Five Years

Research in the Social Change and Social Structure Unit currently covers the following broad areas:

(a) *Sociology of development*, especially its cultural and political aspects;
(b) *Social policy* in the context of marketisation and structural adjustment, with special reference to the environment and social justice;
(c) *Gender studies* on the gender-specific aspects of the contemporary social structure and conceptions of masculinity and femininity;
(d) *Media and visual culture*, including film and other popular art forms;
(e) *Comparative Asian development*, particularly in reference to India and China.

VII.2 Agenda for the next five years: 2006-2011

Within these areas, the specific sites where research is planned over the next five years include the following:

1. Emerging trends in family and marriage.

Specific projects are planned on the intersection of marriage and migration; the redefinition of family roles and responsibilities in the context of diaspora; and the dynamics of matchmaking.

2. Social ecology

Work in this area will focus on the institutional practices and discourses around the management of natural resources in the context of national development. It will look at environmentalism as an increasingly significant ideology that shapes social practice, involving specific forms of appropriation that have disparate effects on different social groups. Environmental practices will be explored both from the perspective of "civil society" or environmental NGOs that aim to pursue "the public interest" and from the perspective of people displaced by projects of development and environmental "improvement", such as large dams and urban infrastructure. An emerging area of interest will be the urban environment.

3. Citizenship

Work in this area will explore the changing meanings of citizenship in terms of the "social exclusion" approach that seeks to understand the impact of economic restructuring on disadvantaged social groups. Under this theme, the changing role of the state and emerging forms of neo-liberal governance will be examined in relation to the shifts in democratic political

practice. The modes by which women and the urban poor claim citizenship rights will be an area of special emphasis.

4. Globalization

Work on this theme will study the impact of globalization on the spatial boundaries of cultural regions and communities in an effort to understand the differential impact of globalization on specific social groups and particular dimensions of social life, especially the media and culture industries. Research will focus on the modes by which social groups understand and articulate their cultural position vis-à-vis globalization.

5. Cultural production, patronage and hierarchy

Linking up with themes 3, 4 and 8, work in this area will examine the politics of patronage and cultural production within specific regional formations in India, and also the ways in which globalization is impacting on media industries and the distribution of media products and popular culture in India and the 'Greater China' sphere.

6. Asian Regional Development

Continuing earlier comparative research on social issues in India and China, it is proposed to take up aspects of regional development along the India-China border, especially in the northeast.

Contributions to Indian Sociology

One of the main responsibilities of the Sociology Unit is the triannual journal, *Contributions to Indian Sociology*, which is an internationally reputed, refereed journal of South Asian Sociology and Social Anthropology (published by Sage Publications). A special issue on *For a Sociology of India* is planned for 2007.

Theme VIII:
Health Economics and Policy

VIII.1 The Last Five Years (2001-2006)

The research in these five years can be broadly distributed across themes, and is discussed below:

1. International agreements and the health sector

In 2000, the World Health Organisation – South East Asia Regional Office (WHO – SEARO) requested IEG to carry out a study on the "Commercial presence in the health/hospital sector under GATS". A study conducted by the unit still remains one of the early works in the area of impact of globalization on the health sector, which consolidated on its earlier work in this area.

2. Demand for curative care

The research on GATS and the health sector made possible many interactions with the hospital sector, and helped HPRU initiating an unique research collaboration with one of the largest corporate hospitals in India. In 2001, a collaborative research - Demand for curative care: an example of an Urban Hospital – was initiated in partnership with the Hinduja Hospital, Mumbai. This was in a way a rich extension of earlier work undertaken by the unit on Demand for Curative Care in Rural India.

3. Economics of HIV/AIDS

In keeping with past tradition, HPRU/IEG continued to respond to the needs of the growing epidemic of HIV/AIDS in India, and was involved in several research projects aimed at providing evidence-based policy directions to respond to the epidemic.

a. UNAIDS South Asia Regional office, in 2002, requested IEG to become the India database center for the "Development of HIV/ AIDS database and analysis of socio economic impact and programme management aspects".
b. On the HIV/AIDS impact mitigation side, the World Bank- funded study on "Willingness to pay for Antiretroviral treatment", was also started at around the same time, and remains a unique contribution of IEG to the literature on contingent valuation.
c. Faculty of HPRU was also involved in a much larger study on cost-effectiveness of Antiretroviral Therapy in India, and has been part of the only initiative on such analysis, and a co-author on a subsequent World Bank book entitled HIV/AIDS "Treatment and Prevention of HIV/AIDS in India: Modeling the costs and consequences"

d. A quantitative study entitled "Improving the Hospital Environment for People Living with HIV/AIDS in India", which looked at three hospitals in Delhi to understand what policy changes were necessary to improve treatment for HIV positive individuals.

e. IEG was the first institute to start discussions around the possibility of health coverage for HIV treatment. In 2003, the Population Council requested IEG to carryout a study entitled "Access to Antiretroviral Therapy (ART) in India: A Feasibility Study". This study helped generating further interests in exploring alternative coverage mechanisms.

f. United Nations Development Programme (UNDP), requested IEG to help them develop innovative health insurance packages for covering HIV/AIDS treatment, and HPRU undertook a study entitled "Coverage for Antiretrovirals: Alternatives for Care and Support Organisations", which involved a costing study to come up with alternative health coverage schemes.

g. In 2005, recognizing HPRU/IEG's unique position in health and health care economics, in 2005, the World Bank requested HPRU to undertake an economic costing exercise to arrive at the true costs of the Government programme, which aims at providing free Antiretroviral treatment. In the first phase, a feasibility study was carried out, and the second phase of the study is to be completed in May 2006.

4. Research in Health Policy

In 2003, the Global Health Policy Research Network of the Centre for Global Development (CGD) invited HPRU to become its partner and provided it with generous grants to develop initiating papers that are relevant to Indian health policymaking. The flexibility of this collaboration enabled HPRU to decide the research topics and initiate independent research, through innovative partnerships. HPRU undertook three studies under this, one each on social health insurance, voluntary health insurance and free ARV programme of the government. The research on voluntary health insurance resulted in a unique collaboration with a public sector insurance company – the National Insurance Company (NIC). This was one of the first examples of collaboration between an insurer and a research institute, where the sensitive database was made available to IEG for research.

5. Tenth plan and the health sector

HPRU was involved in the Mid-Term Review of the Tenth Five Year plan on the health sector at the request of UNDP. This was a critical piece of work, which enabled it to understand the health sector from the planning perspective, and informed research on its other activities as well.

6. Access to health technology

The International AIDS Vaccine Initiative (IAVI), in its programme related to "Preparing Now to Assure Access", requested HPRU to undertake a review of the Indian experience of access to newer health technologies. A study entitled "The adoption and use of health technologies in India: Preparing for access to an AIDS vaccine" was started in December 2004, and is now

ready for outside review and dissemination. Under this, four health technologies are being considered: Hepatitis B, No-Scalpel Vasectory, ARV and Voluntary Counselling and Testing.

7. Economic Impact of Cardiovascular Diseases

In 2005, HPRU accepted the request of the "Initiative for Cardiovascular Health Research in Developing Countries (IC – Health)" to undertake a study on the "Assessment of the Economic Impact of CVD in India". This was the first attempt in the country to look at the economic impact of non-communicable diseases.

8. Financial Sustainability of Immunization Programmes

HPRU has been able to spread its research and work agenda beyond country level programmes. At the request of the WHO/SEARO, it has been involved since 2005, in the activities called "Financial Sustainability Planning (FSP) for Immunisation". HPRU is collaborating with the regional office of WHO to assist countries like Nepal, Bhutan, India and Sri Lanka to prepare their national financial sustainability plans, and also in identifying research areas that may help improve their national immunisation programmes.

VIII.2 The Next Five Years

In looking into the next five years, the following areas shall be focussed on:

1. Economics of HIV/AIDS

HPRU will continue to assist the country programme in the area of economics of HIV/AIDS. One area of research will be on the economics and financing of the 2nd line Antiretroviral Treatment in India. In addition, the unit may undertake research on evaluation and cost-effectiveness of programmes and strategies. Finally, one area of current interest is on resource tracking and allocation, and IEG faculty has already been engaged in preliminary discussions with organizations around national AIDS spending assessment.

2. Health insurance

The health insurance sector is growing very fast, and is likely to see rapid changes in the years to come. Given HPRU's unique contribution to the research and literature on health insurance, it is important for it to remain engaged in this field of research.

3. Financial sustainability of immunization programmes

IEG will continue to assist countries in the region on immunization financing and economics of immunization.

4. Economic impact of diseases

IEG may consider extending its research on impact of Cardiovascular Diseases to national level, and is currently engaged in discussions with IC-Health.

5. Urban health

UNDP has involved IEG in a project on urban poverty, which includes health of the urban poor; HPRU is already involved in preliminary discussions on how to organize research on this theme.

6. Development and Health

HPRU staff would like to extend its research agenda to core issues of poverty, development and health. In particular, initial discussions are on around how the unit's major areas of interest like health insurance and economic impact can be interlinked to analyses of poverty and development. This endeavour would also see HPRU extend collaboration to grass-roots organizations working on health and livelihood issues.

7. Health outcome, health financing and demand for health care in India

With the availability of the 60th round of NSS on health, HPRU aims to begin serious analysis of changes in these areas.

Theme IX:
Labour and Welfare

This theme is the most recent one to be added to the themes of research at IEG. It was listed as a separate theme because it was felt that the faculty should devote special attention to the problems of poverty, unemployment and emerging social and economic conflicts and tensions in the process of economic reform.

Given that employment is the primary source of income for majority of the population, employment generation has become an important objective of all the governments. Despite the fact that full employment was the primary objective, and gradual transfer of people to high-income jobs as secondary objective of its development strategy, India is still struggling to attain the primary objective, i.e., employment to all those seeking jobs.

Given the importance of employment in a developing and populous economy like India especially in alleviating poverty, IEG faculty have been engaged in the analysis of –

(i) employment growth and patterns at the national and regional level;
(ii) incidence of poverty at the national level, its variation across the states and factors influencing it;
(iii) employment generation in the broad sectors like industry and agriculture, and their differences in productivity and wages;
(iv) impact of employment on the incidence of poverty;
(v) rural-urban and gender disparities in obtaining employment; and
(vi) the provision of basic amenities such as supply of drinking water and health services.

1. Macroeconomic Studies On Employment and Poverty

Employment growth, patterns and potentials at an aggregate economy level and in sectors such as agriculture, rural non-farm sector, urban manufacturing and tertiary sectors, and interconnections among them, constitute an important part of the Institute' research. One way of understanding the inter-sectoral linkages is to address the employment issue in the macro-econometric framework, which enables one to assess the impact of several macro variables on aggregate employment and that of different sectors. For this purpose, employment data from different sources can be integrated with the required adjustments. This would not only enhance the scope for forecasting employment in the future years but also lay support to the working of optimal employment policy. Technology, factor prices and employment are intimately related and hence needs to be studied with great care for suggesting the removal of undue subsidies and forces that may work as hindrances to employment growth. Two other areas of importance at the macro level that have been done at the Institute are the impact of economic reforms on the employment and poverty, where reforms include fiscal reforms in terms of reductions in subsidies and government expenditure.

2. *Industry Studies on Employment, Productivity and Labour*

Given that organized industry was the primary instrument of development in the Mahalanobis strategy, employment in the organized industry has always been a matter of concern much more so in the post-reform period. Some of the areas that have been researched extensively at the Institute in this respect are: changes in the employment generation (quantity as well as quality) in the organized industry and across the industry groups in the post-reform period; impact of specific reforms such as liberalization of trade, foreign capital inflows in particular foreign direct investment, and technology transfers including technology imports, on the employment possibilities in the organized industry – aggregate as well as individual industries; spatial concentration of industry and hence employment opportunities.

Equally important reason for a wider interest in the organized industry since the beginning is its capacity to generate highly productive jobs. It is the productivity of an economic activity / organization that enables the organizations to create sustainable and high-income jobs. Technology being the primary determinant of productivity, interface between technology, productivity and employment has been an important area of research. So is the analysis of the relationship between productivity and wages and differences in these across industries / sectors. One of the most widely researched areas in this respect is employment, productivity and wage differences across the small and large-scale industries. The policy-created inflexibilities in the organized labour market that has come in the way of generation of increasing employment opportunities in the organized industry, makes the relationships between labour reforms and employment opportunities an important study.

3. *Studies on Agriculture, Rural Employment and Poverty*

In India, which still remained as rural economy, agriculture sector assumes utmost significance as it is not only the main source of rural employment but also accommodates 60% of the country's workforce. Issues of concern in this area that engaged Institute faculty' attention are: stagnation in agricultural employment and possibilities for improving employment potential of agriculture involving crop-based as well as allied activities; rural non-farm employment and factors responsible for it; employment and incidence of poverty in rural India across the regions; supply and demand conditions for female labour supply.

4. *Studies on Disparities in Employment Opportunities*

Differential access to work opportunities enhances income inequalities and poverty. The earlier economic policies are said to have aggravated disparities by constricting growth and structural changes in the economy and introducing rigidities in the organized labour market. Important areas of inequality that attracted the attention of researchers are: formal-informal sector, rural-urban and gender disparities in terms of employment opportunities and wages.

5. *Rural – Urban Disparities, Migration and Urban Informal Sector*

Employment in the informal sector especially in urban areas has been the research interest of the Institute since long and continues to be so. Rural-urban disparities lead to migration of labour to large cities and exert tremendous pressure on the existing infrastructure base of the city economy. Notwithstanding the hazards of slum life, rural population migrate in search of jobs and

access information pertaining to the urban job market through various informal channels. The role of informal institutions / networks in reducing risks in the job market and in stabilising the standard of living is another important research area, which has gained prominence and needs to be explored further. In the context of liberalization and investment in large urban centres by multinationals the issue of rural-urban migration demands a fresh analysis.

6. Gender Disparities and Women's Employment

Women employment not only empowers them but also enables them to develop a sense of self-esteem and confidence. Farm women that constitute a large part of India's women facing adverse effects of stagnating employment in agriculture. Women enterprises based on the local agro-based activities is a viable alternative. Factors that encourage women enterprises are worth studying. Another related study is the supply of female labour from below poverty line households in rural areas and its relation with the wage rate and number of earning members in the family. The gender dimension of employment and its relationship with several socio-economic and demographic variables need to be understood carefully. Inter-household inequality, education, caste, fertility behaviour, nutritional status, labour market participation and empowerment of women are all highly interrelated, and hence a detailed research on these relations can provide a meaningful base for policy formulation.

7. Labour Productivity, Wages and Standard of Living

Labour productivity, wages and standard of living are closely intertwined. With economic reforms and labour market flexibility how these variables have been behaving in relation to each other and in relation to other important macro variables need to be assessed in the context of India and other countries that have been undergoing structural reforms. Possibilities of convergence of labour productivity across states and / or activities (or industries), given the variations in infrastructure endowment, constitute another important dimension of research. Productivity gains shared by investors and labour are to be assessed critically.

8. Role of Infrastructure in Raising Productivity and Providing Employment Opportunities

Quality of life cannot be assessed merely in terms of per capita income or the head count measure of poverty. Other indicators such as percentage of population with access to safe drinking water, sanitation, electricity, minimum space required for dwelling per person, and skill formation are to be considered for judging the impact of development on the population. The role of infrastructure in improving productivity and opening up new opportunities as sources of livelihood determines an important course of research. Are large cities more productive compared to small and medium sized towns? What are the sources of productivity differentials? Are the labour market functioning and real earning levels in large cities are higher than elsewhere? What are the still unresolved questions, which have bothered development economists for several years in explaining the dynamics of urbanization? Future research is expected to focus on some of these issues in the broad context of rural diversification and urbanization following as a concomitant of industrialization and the growth of tertiary activities. Detailed analysis of labour market functioning in rural and urban areas, segmentation of the labour market along the lines of caste, skill, physical distances and the interconnections between the labour market and other markets are expected to offer an in-depth understanding of the issues.

IEG FACULTY MEMBERS

Name	Qualification	Fields of Specialization
Honorary Professors		
P.N. Dhar (1987-)	M..A. (Eco.) University of Delhi	Industrial Economics; Energy Studies; Economic Policy; Political Economy
Ashish Bose (1991-)	Ph.D.(Eco.) University of Delhi	Demography; Urbanization
T.N. Madan (1996-)	Ph.D.(Social Anthropology) Australian National University	Religion and Secularization; Occupations and Professions; Family Studies
C.H. Hanumantha Rao (1996-)	Ph.D.(Eco.) University of Delhi	Agriculture; Fiscal Policy; Development Planning, Environmental Economics
Director		
Kanchan Chopra	Ph.D. (Eco.) University of Delhi	Resource and Environmental Economics, Agricultural and Development Economics
Professors		
Bina Agarwal	Ph.D. (Eco.) University of Delhi	Environmental Studies; Agricultural Economics; The Political Economy of Gender; Population and Human Resource Development
Pradeep Agrawal	Ph.D. (Eco.) Stanford University USA	Macroeconomics, Development Applied Economics, International Economics; and Micro/Industrial Organization
T. Adi Bhavani	Ph.D. (Eco.) University of Delhi	Technology; Trade, Labour and Industrial Development; Economic Reforms

Name	Qualification	Fields of Specialization
Moneer Alam	Ph.D. (Eco.) University of Lucknow	Economic Demography, Manpower Planning and Forecasting and Ageing, Health and Income Security Issues
B.B. Bhattacharya	Ph.D. (Eco.) University of Delhi	Econometric Forecasting; Macroeconomic Analysis and Policy; Public Finance, Money and International Finance
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M.N. Murty	Ph.D. (Eco.) University of Delhi	Environmental Economics and Resource; Fiscal Policy; Micro Economics, Cost Benefit Analysis
N.S. Siddharthan	Ph.D. (Eco.) University of Delhi	Technology and Globalisation; International Economics, Multinational Corporations, and Industrial Organisation
Patricia Uberoi	Ph.D. (Sociology) University of Delhi.	Family & Kinship; Gender; Social Policy; Comparative Asian Development; Popular Culture

Name	Qualification	Fields of Specialization
Visiting Professor		
Basanta K. Pradhan	Ph.D. (Economics) ISI	Macro Economics, Monetary Economics and Development Economics
Associate Professors		
Amita Baviskar	Ph.D. (Dev. Sociology) Cornell University	Environmental Politics, with a focus on social inequality and natural resource conflicts, environmental and indigenous social movements, anthropology of development, urban environmental politics, state formation and the environment in India.
N.R. Bhanumurthy	Ph.D. (Eco.) University of Mysore	International Economics, Macro-Monetary Economics and Applied Econometrics
Purnamita Dasgupta	Ph.D. (Eco.) Jawaharlal Nehru University	Health Economics, Environmental and Resource Economics, and Development Economics
Nilabja Ghosh	Ph.D.(Eco.) ISI	Agricultural Economics
Brajesh Jha	Ph.D. (Eco) NDRI, Karnal	Agricultural Economics
Sabyasachi Kar	Ph.D. (Eco.) Jawaharlal Nehru University	Macroeconomics, Growth Economics and Development Economics
Pushpam Kumar	Ph..D. (Eco) University of Delhi	Environmental Economics, Natural Resource Economics, Applied Welfare Economics

Name	Qualification	Fields of Specialization
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Assistant Professors		
R.S. Bora	Ph.D. (Eco.) Kurukshetra University	Migration; Regional Development
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Subodh Kandamuthan	M.Phil (Applied Economics) Jawaharlal Nehru University	Health Economics; and Environment Economics
Suresh Chandra Sharma	Ph.D. (Stat.) University of Rajasthan	Demography and Health
Pravakar Sahoo	M.A. (Eco.) University of Hyderabad	Public Finance, Macro Economics, Monetary Economics, International Trade and Finance
Mayur Trivedi	PGDHM (Health Management)	Health Economics and Policy, Health financing and insurance, Economics of HIV / AIDS.
R.P. Tyagi	M.Com. with Statistics, University of Delhi	Demography, Human Resource Development & Primary Health Care

Name	Qualification	Fields of Specialization
Junior Consultants		
Ranjan Kumar Das	M.Phil (Applied Economics) JNU	Macroeconomics, Econometrics and Financial Economics
Meenakshi Ghosh	M.A. (Economics) University of Delhi	Econometric and Environmental Economics
Preeti Kapuria	M.A. (Economics) Jamia Millia Islamia	Econometrics and International Finance.
Sir Ratan Tata Fellows		
Anita Kumari	Ph.D. (Eco) University of Delhi, Delhi	Industrial Development