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INDIAN INSTITUTE FOR
HUMAN SETTLEMENTS

INDIA
Vision 2030

Version 2.0

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TABLE OF CONTENTS

LIST OF ABBREVIATIONS

AICTE	All India Council for Technical Education
ASEAN	Association of South East Asian Nations
BJP	Bharatiya Janta Party
BoP	Balance of Payments
COA	Council of Architecture
CBO	Community Based Organisation
CPR	Centre for Policy Research
CSD	Council for Social Development
CSIR	Council for Scientific and Industrial Research
DEC	Distance Education Council
DPC	District Planning Committee
EU	European Union
EWNS	East West North South
FDI	Foreign Direct Investment
FRBM	Fiscal Responsibility and Budget Management
GATT	General Agreement on Trade and Tariffs
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
GoI	Government of India
GQ	Golden Quadrilateral
GST	General Sales Tax
GW	Giga Watt
HRD	Human Resources Development
ICAR	Indian Council of Agricultural Research
IGNOU	Indira Gandhi National Open University
ICT	Information and Communication Technologies
IIM	Indian Institute of Management
IIT	Indian Institute of Technology
IRAHE	Independent Regulatory Authority for Higher Education
IT	Information Technology
ITES	Information Technology Enabled Services
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
JNU	Jawaharlal Nehru University
LMMC	Like Minded Megadiverse Countries
MDG	Millennium Development Goals
MoFMW	Ministry of Family and Maternal Welfare
MSME	Medium Small and Micro Enterprises
MSSRF	M S Swaminathan Research Foundation
MW	Mega Watt
NKC	National Knowledge Commission
NGO	Non-Governmental Organisations
NREGA	National Rural Employment Guarantee Act
NHRM	National Rural Health Mission

NSE	National Stock Exchange
OBC	Other Backward Caste
OCW	Open Course Ware
OECD	Organisation for Economic Co-operation and Development
ONGC	Oil and Natural Gas Cooperation
PDS	Public Distribution System
PHC	Public Health Clinic
PHFI	Public Health Foundation of India
PPP	Purchasing Power Parity
PPP	Public Private Partnership
PRI	Panchayati Raj Institution
PV	Photovoltaic
RBI	Research Bank of India
R&D	Research and Development
RGGVY	Rajiv Gandhi Grameen Vidyutikaran Yojana
RTI	Right to Information Act
RWA	Resident Welfare Association
SC	Scheduled Caste
SEZ	Special Economic Zone
SPA	School of Planning and Architecture
SPV	Special Purpose Vehicle
ST	Scheduled Tribe
STD	Subscriber Trunk Dialling
TB	Tuberculosis
TERI	The Energy & Resources Institute
UGC	University Grants Commission
ULB	Urban Local Body
UN	United Nations
VAT	Value Added Tax

I. INTRODUCTION

This IIHS working paper is a rolling draft of an ongoing exploration of India's potential economic, natural resource, human development, environmental, and human settlements status over the coming two decades.

The paper examines eight contemporary demographic, economic and socio-political transitions and their associated challenges, opportunities and potential synergies. It then identifies five macro-outcomes that may and should be achieved by India, if this synergy can be enabled: the end of endemic poverty and reduction of inequality; progress around social transformation; the initiation of a century-long environmental sustainability transition; further political consolidation; regional and wider geopolitical engagement and economic integration into a more inclusive single national market.

It suggests that India's forthcoming urban transformation provides a window of opportunity to coalesce these multiple change processes to achieve these outcomes. The massive momentum of South Asian urbanisation will provide a powerful opportunity to explore alternatives to the 'standard' OECD model of development that many countries, including China, appear to be moving towards.

The paper contends that a deep reform of India's higher education system, especially interdisciplinary education around habitat and human settlements is one of a number of necessary conditions to help realise these changes. This would help fill a large human and professional deficit in India across private, public, Municipal, Panchayat and civil society institutions to enable these prospective opportunities to become a reality. It could do so by creating meaningful livelihoods for a large number of younger people and mid-career professionals via a multilingual learning environment, enabling them to become entrepreneurs, innovators and changemakers who would seed and maintain the momentum behind these everyday changes.

The IIHS will establish an independent National University, supported by a range of habitat and settlement-related services to address these human development, learning and knowledge creation challenges. It will do this by building a network of national and international partners: universities, movements, think-tanks, firms, civil society and community-based organisations, changemakers and entrepreneurs to enable cascading changes in India's human settlements knowledge and innovation ecosystem.

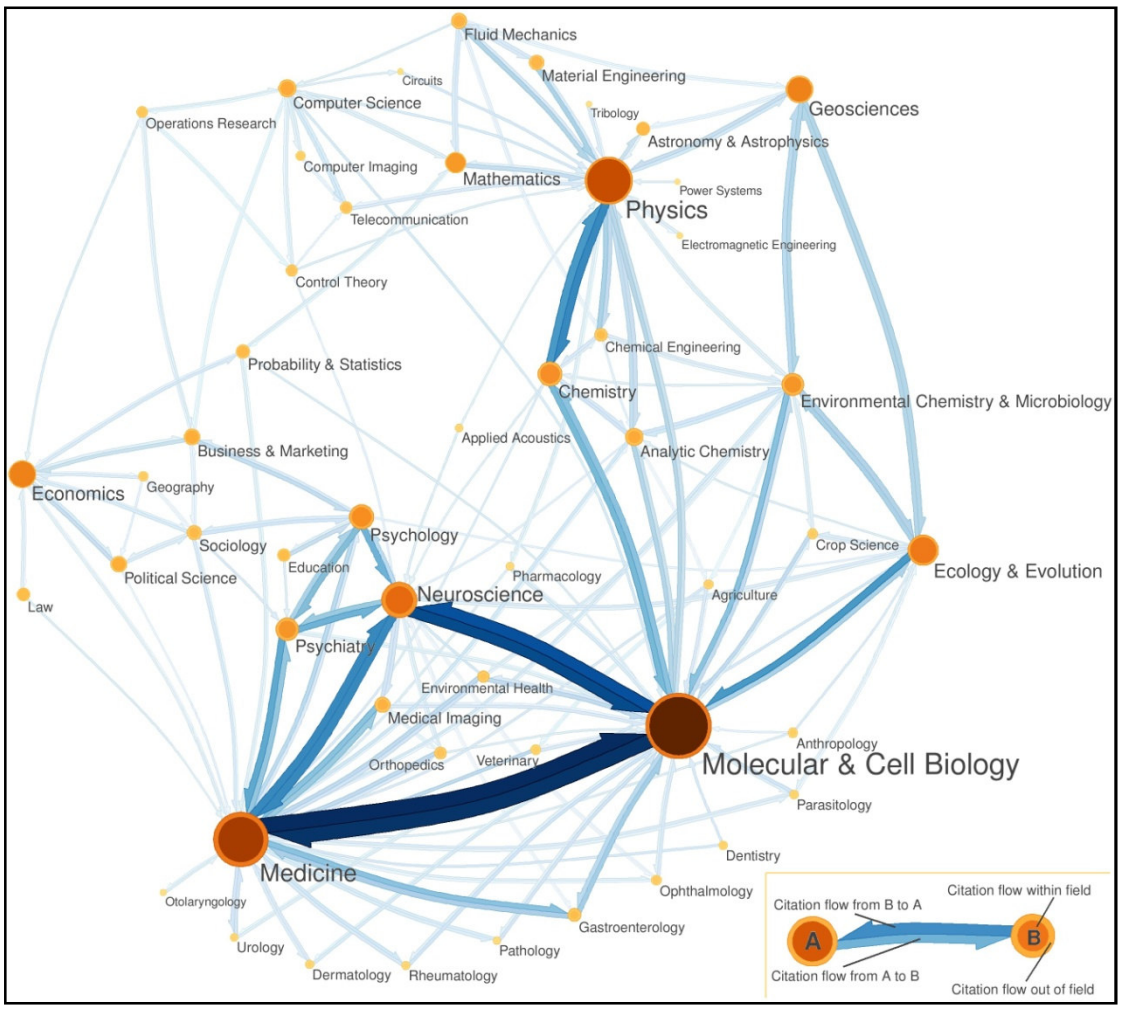
This document frames the IIHS' normative vision of India in 2030 and accordingly identifies key arenas of engagement for the coming decades. These arenas will sit at the core of the IIHS' pedagogic and epistemic / research endeavours as each of them presents its own challenges and opportunities.

This vision represents an epistemic departure from the conventional practice that has evolved in most leading OECD knowledge institutions: of building a research agenda out from the frontiers of established disciplines. Rather than focus only on the construction of knowledge within the boundaries of disciplines, be they the social or environmental sciences, engineering, planning or the humanities, this document prompts the development of a research and praxis agenda for the IIHS from a synthetic vision of the ongoing Indian development 'project', and more specifically the urban transformation that will distinguish South Asia over the next half-century.

This will not only need to come from multiple perspectives and integrate various disciplinary approaches but also be dynamic, responding to changing contexts and developments in the

systems that it seeks to engage with. In that sense, this document and the vision itself would need to be dynamic, responding to a rapidly changing external and internal environment.

Figure 1: Epistemic Maps of Major Disciplines (2004)

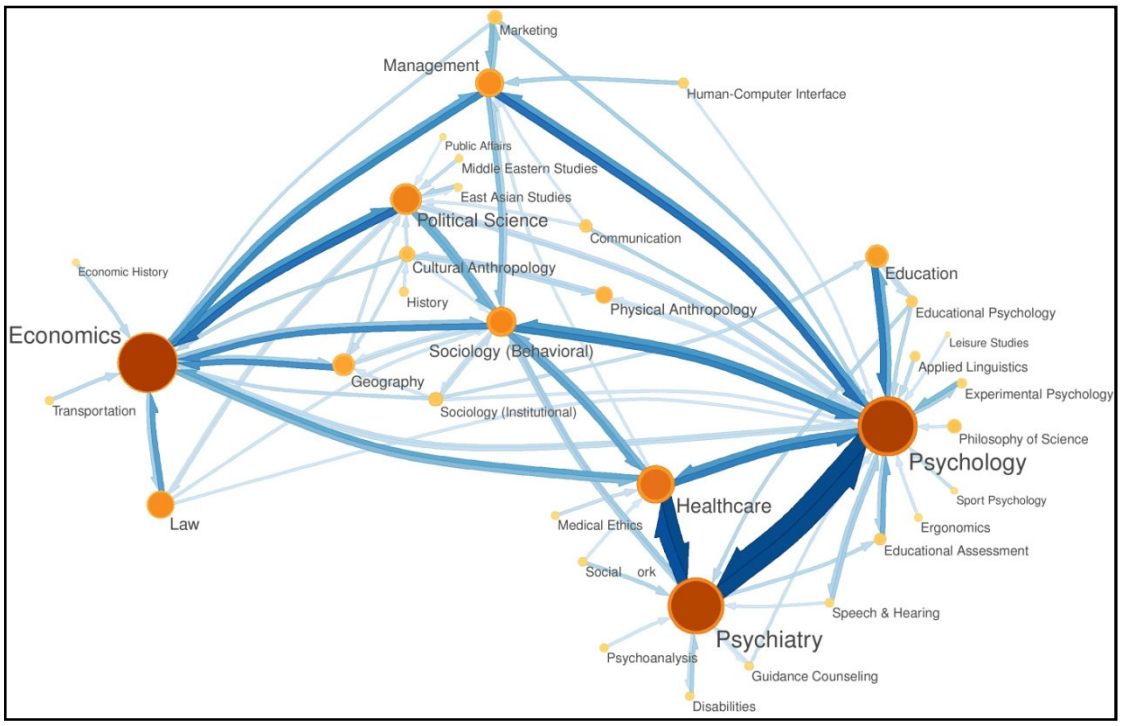


Source: www.eigenfactor.org

This comes from an examination of the epistemic structure of the global OECD-led knowledge system as symbolically presented in Figure 1. This plots the primary interdisciplinary linkages between knowledge areas in 2004 from all the research published in the top-1000 journals in the world. The volume of knowledge creation is represented by the size of the interdisciplinary dot, while the width of the arrow indicates the flux of interdisciplinary knowledge flow between one discipline and the other.

This map represent the fundamental late 20th century shift away from physics and chemistry and the mathematical sciences towards the biological and medical sciences as dominant sites for research and knowledge creation. Even though biased by the particular nature of publications in particular disciplines, this provides a dynamic map of the flow of knowledge between disciplines and the increasing move towards interdisciplinarity.

Figure 2: Epistemic Maps of the Social Sciences (2004)



Source: www.eigenfactor.org

Much of the current knowledge creation, while important to the large goal of human knowledge creation and 'civilisation', is largely irrelevant to the context of the daily challenges faced by much of the global population that lives in low and middle income countries. This is especially true of the poor and vulnerable citizens of India. India's need is not only to push the frontiers of human knowledge and disciplines as currently constructed, but address the current and emerging challenges of day-to-day life of what will be the largest national human population in history by the 2040s.

The IIHS and a new generation of emerging Southern Universities and knowledge institutions are therefore engaged in a larger epistemic project of redefining the boundaries of research and knowledge generation based on their social, economic and environmental contexts and needs, rather than only in service of 'universalist' perspectives and knowledge that only serve to strengthen older hegemonies. As similar processes permeate knowledge institutions of the North, the transition to a more sustainable, equitable and harmonious 21st-century orientation can be expected across the world.

India: Vision 2030 is a small step in that direction. This document is structured as follows: the next section introduces contemporary India, 60 odd years after independence. Section III outlines the eight key simultaneous transitions India is undergoing. Section IV describes five meta-outcomes or 'grand challenges' envisioned for India by 2030. Section V maps 'arenas of engagement' and the constraints and opportunities that each of these outcomes pose. Section VI outlines the key institutions and agents which will play a role in this transformation. Section VII outlines the possible trajectories for urban transformation and examines the role of higher education in transforming India and IIHS' unique offering in this regard and Section VIII concludes.

II. INDIA AT 63

Since its Independence in 1947, India has consolidated its political identity; made significant progress in the areas of food security, water supply and literacy; established a diversified industrial base, modern financial systems and markets and close to trebled its population. Democratic traditions have been deepened, a free press and judiciary encouraged, and commitment to addressing poverty, rural-urban, caste, class and gender differentials reiterated in policy and confirmed in legislation.

In spite of these achievements, India in the early 2000s has the largest population of poor and illiterate people in the world, with persistent and increasing inequality. Most social and economic indicators lag behind other nations like China that started on the post-colonial development journey in similar circumstances close to six decades ago.

A growing population and its pressures on a limited natural resource base, strong historical gender and caste asymmetry, an inward-looking development strategy, poor governance and short-sighted and restrictive economic policies have ensured that much of the country's development potential remained unrealised, till the late 1980s.

The last two decades mark a strategic shift in India's trajectory from a slow-growth, inward-looking mixed-economy, dominated by a single political culture to a period of increasing mobilisation of deprived regions and groups; restructuring of social and political formations to an era of coalition national governments; moderate to high economic growth; intermittent bursts of reform and institutional restructuring; increasing globalisation and international presence and local environmental and resource conflict.

Many of these deep structural changes can be traced to economic, social and political processes that originate in cities and urban areas. These urban settlements surprisingly house less than a third of India's population who live in less than one percent of India's 0.55 million settlements, the rest being villages. Much is made of the demographic dominance of villages on Indian politics, livelihoods and social processes, but recent analysis shows that this may be overstated and is certainly changing with a generational shift in political leadership.

India's 550,000 villages host 70percent of its population but are responsible for less than 40percent of the country's GDP. On the other hand, India's 5,000-odd cities and urban areas increasingly dominate economic value addition, capital formation and revenue generation; incremental human development and productivity growth (McKinsey, 2010). They have also provided an impetus to the ongoing process of political contestation, social transformation and the attempt to transition to a more sustainable development pathway.

It may be time to return to Ambedkar's exhortation and use a powerful but neglected entry point i.e. urban India to accelerate a cross-cutting process of social and economic change, that will help the world's largest democracy and largest concentration of poor and illiterate people explore a substantially different future from that experienced in the first five decades of the Republic.

III. EIGHT ONGOING TRANSITIONS

South Asia, and India in particular, are the sites of eight ongoing interlinked structural transitions that will largely play themselves out over the first half of the 21st century. If the potential synergies between this can be harnessed – these could provide the motive power for South Asia's return to a state of relative prosperity and significant urbanisation that it enjoyed before its mid-18th century colonial engagement. A brief sketch of these transitions:

1. **Demographic transition** which will see India becoming the most populous country in the world by mid-century with a peak population of over 1.5 billion (Census, 2006, UN, 2008). Much of this incremental growth will occur in the northern states of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh (Census of India, 2006) leading to a double-humped demographic dividend (Nilekani, 2008).

2. **Health transition** in which the mean life expectancy could cross 80, along with a slow transition from infectious to lifestyle diseases with an intermediate period during which a dual burden of diseases will need to be borne (NCMH, 2005).

3. **Education transition** in which elementary education is expected to be universalised by 2015, followed by secondary education by the mid 2020s, creating the largest single national population of school-educated workers in the world and one of the largest global populations of university educated workers (Nilekani, 2008, Hughes, et.al. 2009).

4. **Energy transition** a simultaneous shift from traditional biofuels to conventional fossil fuels like coal and oil and transition fuels like gas, nuclear and renewables like wind and solar. This will be simultaneous with access of electric power and commercial energy by the near half of India that lives without it at the moment. (Planning Commission, 2005, De Vries, Revi et. al., 2008)

5. **Information transition** in which India moves from a locally-centred, largely disconnected and often asymmetrically organised oral culture (esp. for women, Dalits and other excluded groups) to a highly connected society enabled by the most extensive and cheapest telecommunication, IT and Internet-based network in the world (Revi & de Vries, 2006).

6. **Environmental transition** that comprises of simultaneous brown (e.g. wastewater, sanitation and sewage); grey (e.g. indoor and outdoor air pollution) and green (e.g. efficiency, recycling, reuse and climate change resilience) transitions, on the path to greater environmental sustainability, especially within urban landscapes (McGranahan & Mercutollio, 2007).

7. **Economic transition** from a primary sector-led economy in the 1950s to a mixed secondary and tertiary-sector led economy in the early 21stcentury. India is exceptional among large emerging market countries to have a strong domestic demand-based growth trajectory and a larger share of services than manufacturing in economic output (Dasgupta & Singh, 2005).

And as a process that integrates the earlier seven transitions;

8. **Urban transition** during which India would cease to 'live in its villages' and become a predominantly urban culture in both settlement structure and livelihood terms[1]. India's economic output and public revenues have come largely from cities from the mid-1990s (Revi, 2005). It is through the urban transition that the other seven transitions largely play out.

A more detailed exploration of these medium-run transitions is presented below. While their progression is not inevitable, the momentum of change underway in India implies that a significant fraction will be complete over the next 30 to 50 years.

This is contingent on discontinuous or catastrophic change not taking place i.e. serious global or regional conflict leading to large scale involuntary migration; discontinuities in the global economic, trade and financial systems; breakdown of India's Constitutional settlement putting the First Republic at risk; or rapid onset of dangerous environmental and climate change threatening water and ecosystem services and global and regional food security.

1. Demographic Transition

India, with a population of close to 1.2 billion, is the second most populous country in history. In spite of a decline in the pace of net population addition since the 1990s - largely due to population stabilisation in its southern and more recently western states - India will overtake China's population by the 2050s.

India's demographic transition over the first part of the 21st century will shift from relatively fast population growth across most states to a regionally differentiated stabilisation combined with significant aging as life expectancy grows faster than the decline in population growth rates. This will have a major impact on national politics, economics and settlement geography. Regional stability and urbanisation levels could change discontinuously, if dangerous climate change in the rest of South Asia (esp. Pakistan, Bangladesh and Nepal) forces large involuntary migrations, along with internal movements within India.

India could make the best of its projected demographic dividend by rapidly scaling-up the provision of public services in health and education, accelerating improvement in service quality and innovation in these sectors to enable the steady and sustainable growth of human capital and its productive engagement across the economy (Dyson, Cassen & Visaria, 2004). The creation of a social safety net for India will demand significant innovation, as both, per capita incomes and public expenditure may be much lower than other middle-income countries, when they made similar transitions in the 20th century.

Notwithstanding long standing concerns over its large population, India's people remain its key resource. The country has a young population with close to half being under-25. This could enable a steady growth in economic output well into the latter half of the century but it will also require India to add 12 million new (largely urban) livelihood opportunities every year for the next three decades to absorb these young workers (Planning Commission, 2001, 2007).

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[1] An urban area in India is defined as one that has a population in excess of 5,000 along with more than 75% of its working population being engaged in non-agricultural occupations and a density of at least 400 per sq km or a town or statutory urban areas as administratively defined. This has led to an artificially low estimate of India's urbanisation levels when compared to other countries (Sivramakrishnanan et. al., 2004)

2. Education Transition

In a lagged response to its rapidly growing population, India finally rose to addressing the challenge of illiteracy and inaccessibility of school education through a massive publicly-funded programme to universalise elementary education in the 1990s. This has been strengthened via a Constitutional amendment, associated legislation and budgetary provision making the Right to Education (RTE) a fundamental right.

This coincided with a rise in effective private demand for quality education across many parts of the country, often tied to learning some form of English. This led to the simultaneous and consequent proliferation of private schools, as the supply of quality public education was many times less than the demand.

Nevertheless, at the margin, the sheer volume of young people passing through this system ensures a globally competitive pool of workers. Yet this cannot be taken for granted as other countries rapidly improve their educational systems and India's higher education system continues to implode in terms of quality and depth, in spite of the apparent quality of its elite institutions like the IITs and IIMs (NKC, 2005). A number of proposals for radical reform are on the cards, but would take a decade or more to work their way through the system.

India's education transition will proceed from the universalisation of elementary education in the middle of the 2010s, to the near universal provision of secondary education by the mid-2020s. The scale of this education transition in Asia dwarfs the creation of human capital in both size and quality in any other period of human history (Hughes & Hillibrand, 2006). This is discussed further in the Section VI.

3. Health Transition

India has experienced steady improvement in the health status of its citizens, with current life expectancy at birth close to 70, compared to 45 in 1951, due to improved nutrition, environmental health, preventive and curative health care services. Yet, the country is experiencing a classic dual burden of disease as its health transition accelerates. The burden of lifestyle diseases on health systems is becoming increasingly significant, before a significant decline in infectious and communicable disease and maternal conditions takes place. Cardiovascular disease and mental illness now make up a greater share of the burden on health systems than diarrhoea, TB or other childhood diseases (MoHFW, 2005).

India is facing multiple challenges from its dysfunctional health care system, with the virtual implosion of primary public health care in many parts of the country, including in urban areas where it was weak or non-existent in the first place. Globalisation has enabled access to advanced curative systems for the well-off, but the rising cost of accessing health care has negatively impacted access by the poor. Deepening challenges in addressing under-nutrition of children and mothers; the universalisation of immunisation slow progress on sanitation coverage and improvement in health care behaviour are forcing a re-conceptualisation and reform of current health systems in the country. A similar cross-sectoral reform process in urban India is moving very slowly because of the severe lack of human resources and institutional capacity.

4. Energy Transition

India's energy transition is highly differentiated and geographically diverse. It encompasses a simultaneous shift from traditional biofuels to conventional fossil fuels like coal and oil along with a transition of energy carriers like gas and renewables such as wind and solar power

(Planning Commission, 2005). These transitions are taking place simultaneously across the Indian landscape - differentiated by location, economic sector, level of modernisation and engagement with the global economy - often mirroring the state of the real economy i.e. the mix of traditional, modern and post-industrial sectors and those most influenced by globalisation.

The most important energy sources and carriers are coal and oil. Coal underpins much of industrial production and a large fraction of power generation. Oil and petrochemicals provide critical chemical feed stocks and support the bulk of India's growing transportation metabolism. A traditional biomass-based subsistence energy economy still persists in many rural areas and also among the poor in cities as only half of India's households have access to electricity.

India's key energy constraint is that the bulk of its oil and gas is imported and that nuclear power, despite the recent hype, can be expected to play only a minor role in India's energy security. A dramatic rise in fossil fuel prices and new resources being largely located in difficult or conflict-ridden locations had provided a strong incentive to develop abundant domestic coal-based power leading to a wide range of environmental and displacement-led conflict (CSD, 2008). Since the environmental and social costs of coal extraction and the global impact of carbon emissions are significant, there is considerable strategic and commercial interest to develop, incentivise and deploy energy efficiency, low-carbon and renewable energy technology as quickly as possible (Leadbeater & Wilsdon, 2007).

India is thus faced with the challenge of providing universal access to basic energy services to address domestic and livelihood needs while simultaneously implementing widespread energy efficiency measures and a renewable oriented transformation of its energy metabolism (de Vries & Revi, 2007).

5. Information Transition

India has experienced a personal telecommunication and subsequent information revolution since the introduction of STD and mobile telephony starting in the late 1980s (Dahlman & Utz, 2005). The largest numbers of mobile phones globally are now sold in India, which is expected to, in time, catch-up with large highly connected societies such as China and the United States (Hughes, 2006).

The most extensive and cheapest telecommunication, IT and Internet-based system in the world will enable India to move over the coming two decades from a locally-centred, less connected economy and society with large inter-group information asymmetries to a highly interconnected socio-economic system. This will be built on an underlay of strong network-based culture of Indian society and organisations. (Revi & de Vries, 2007).

The telecommunication and Internet revolutions have enabled the growth of India's successful offshoring, IT and ITeS industries. These will continue to grow in depth and size not only internationally but increasingly within domestic markets as Indian IT applications progress down the value chain into the manufacturing and commodities sectors (Sanyal, 2008). They will also help consolidate India's common market and deepen democracy as the application of electronics to Indian elections has demonstrated for over a decade (Nilekani, 2008).

6. Environmental Transition

The Indian economy exceeded its ecological carrying capacity in the mid-1990s (Wackernagel, 2007). The national and ecological deficit has been increasing steadily since

then (GIST, 2007) putting considerable pressure on improving regulation and compliance and enabling multiple phases of the environmental transition. This is of concern because India's poor and vulnerable are most impacted by constraints to resource access and consequent conflict. Their livelihoods and places of residence are often highly exposed and vulnerable to a wide range of natural hazards and environmental externalities created by a rapidly expanding economy.

All three phases of the environmental transition: the brown (e.g. wastewater, sanitation and sewage); grey (e.g. indoor and outdoor air pollution) and green (e.g. efficiency, recycling, reuse and climate change resilience) are simultaneously taking place in India (Revi, 2008, McGranahan, 2007). As the living and working conditions of large numbers of people become untenable due to environmental challenges, these have become important rallying points for local social and political mobilisation.

Conserving and rehabilitating ecological services derived from fast degrading land, water and other natural resources will have an important impact on both livelihoods and biodiversity. India suffers significant regional and local shortages due to an uneven distribution of water resources and rainfall, in spite of the monsoon. The onset of climate change, coupled with rapid growth in water demand and low water-use efficiency will lead to increasing drought-flood cycles in many locations (Revi, 2008). An estimated 50 million people (mainly indigenous tribes) depend directly on forests for their livelihood. Their livelihood and forest bio-diversity is being increasingly threatened by commercial timber, fuel-wood, fodder and medicinal plant extraction and severe grazing pressure from livestock (TERI, 2000).

Environmental conflicts are on the increase in India since the 1970s around deforestation; soil erosion; over-grazing; desertification; displacement by large projects; water scarcity and pollution; urban and industrial effluents; air pollution from industrial and vehicle emissions; and inadequate handling of solid and toxic waste. These are expected to grow worse in the future unless pre-emptive action is taken to address the root causes in unsustainable production and consumption. As pressures to respond to Climate Change mount, India's environmental transition will hopefully speed up significantly.

7. Economic Transition

India's economic transition from a primary sector-led subsistence economy in the 1950s to a mix of secondary (29 percent) and tertiary-sector (54 percent) led economy in terms of output has been relatively steady. The fundamental challenge is that its livelihood structure seriously lags its economic output structure with 28 percent of workers employed in the service sector and only 12 percent in manufacturing. This is largely due to multiple structural constraints: lower and stagnating agrarian productivity, adverse terms of trade; constrained human capital growth, poor access to credit and technology and informalisation (Sengupta et. al., 2008, Gupta, 2009). More recent analysis seems to suggest that the divergence may be reducing through a mix of seasonal and permanent migration and livelihood diversification (Damodaran, 2008).

A slow transition from rural agrarian livelihoods to those in the secondary and tertiary sector, coupled with the collapse of artisanal production, slow growth of non-farm rural livelihoods and public employment, 'jobless' growth and informalisation in the industrial sector pose serious challenges to rural-urban mobility. A relatively slow decline in poverty, especially in urban areas, coupled with the informalisation of the urban economy and increases in differential land and asset holdings by urban elites and entrenched dominant caste and trading groups has not assisted in this transition. The growth of knowledge-based services and industries and enclaves of excellence and globalisation linked wealth creation are evidently not the panacea that they are often presented as.

A key question is whether a service-sector led development trajectory for India can be sustainable in terms of servicing domestic demand and livelihood generation or needs a more radical set of options to be considered. These could help maintain a relatively large proportion of the working population in increasingly urban-like 'rural' areas, but engaged in higher productivity and diversified 'post-industrial' livelihoods that include decentralised network-based renewable energy production, bio-fuel and value-added biomass and food production; 'green' manufacturing and ecosystem services management.

8. Urban Transition

A global urban transition from rural to 'urban' areas will only be complete when both China and India have become predominantly urban (UN, 2008). China has been undergoing the most dramatic urban transformation in human history since the 1990s, with over 15 million people a year being added to cities and urban areas and more than a dozen million-plus cities a year being constructed (Mohan & Dasgupta, 2005, McKinsey, 2010). Rural-urban migration in India has been less than 3 million people a year over the same period (Sivaramakrishnan, et. al, 2004).

India, like much of South Asia, lags the rest of the world in its rate of urbanisation, in spite of its current lower-middle income country status (Growth Commission, 2009). Over two-third of its population still lives in villages, even though livelihood diversification out of the primary sector is slowly gaining momentum. The deceleration of India's urban growth over 1981-2001 is an indicator of the current inelasticity and structural constraints to urban growth. This is partially endogenous and linked to the mixed-up frame of urban Indian governance; illiquid and vitiated land and housing markets and poor infrastructure development. The strong rootedness of India's agrarian population to their land and the slow growth of urban economic and social opportunities have also constrained greater rural-urban mobility (Sivaramakrishnan, et. al. 2004).

The building agrarian crisis in rural India coupled with the potential impact of climate change, the pull of steady urban economic growth and livelihood and educational opportunities could well accelerate urbanisation in the next two decades. Unlike China, India is highly unprepared to address this deluge in terms of institutional capacity, human resources, governance and even building a composite urban culture.

This scale of urbanisation could provide new opportunities for dramatically higher productivity, income and wealth generation; engagement with new occupations and lifestyles that were unimaginable even in the early 1990s. Yet it is fraught with a number of inherent contradictions including over-centralisation in large cities and metropolitan centres and the abysmal condition of large proportions of the poor and vulnerable as land assembly and infrastructure provision lag demand, often by decades.

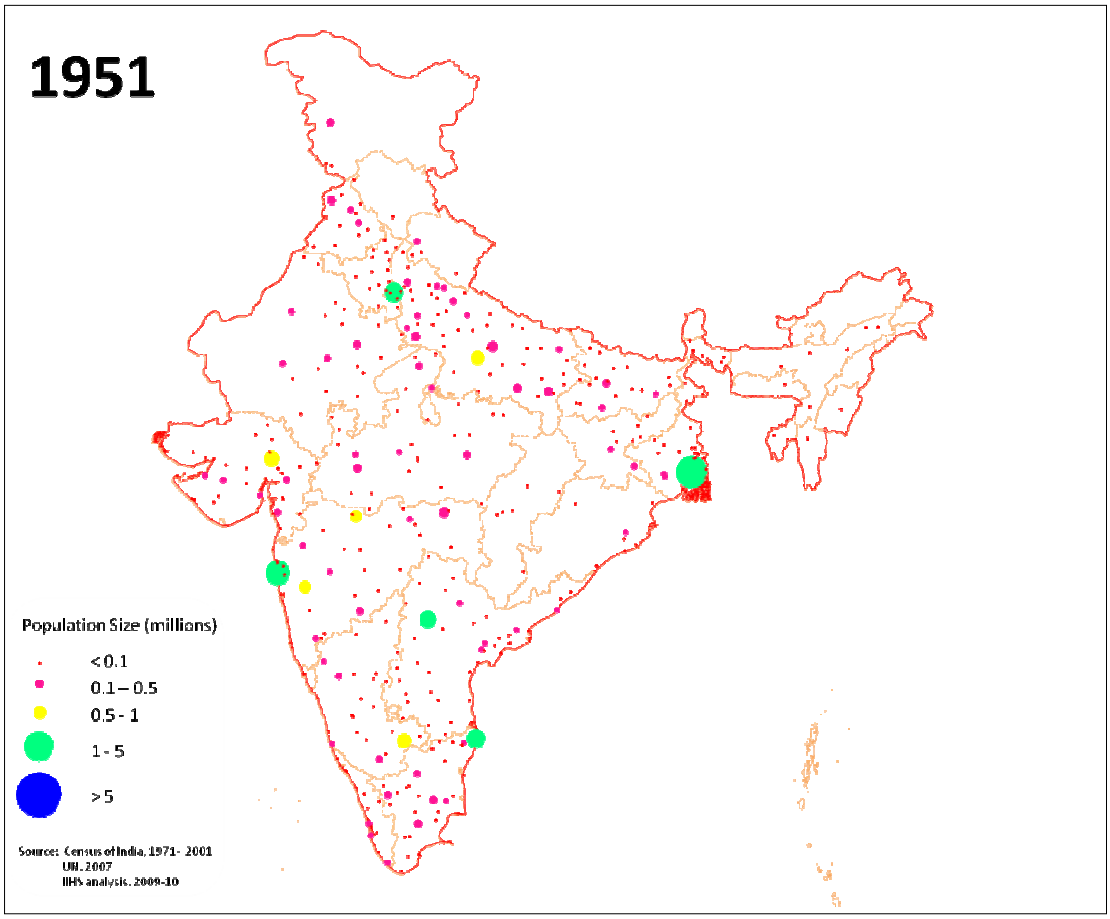
Cities and urban areas are engines of economic growth, creators of livelihood opportunity, sites of innovation and structural transformation in India. They have played and will continue to play an important part in transforming a number of these constraints into development opportunities. States like Gujarat, Tamil Nadu and Andhra Pradesh have taken constrained economic and resource conditions and turned them to their advantage through a process of strategic interventions in cities and infrastructure and industrial development, after investing strongly in basic education, health care and nutrition. It is no surprise that better governed and entrepreneurial Indian states attract a large share of incremental domestic and foreign investment. Others like Kerala, in spite of vastly superior human and social development achievements and favourable decentralised settlement structures have been unable to translate them into comparative economic advantage.

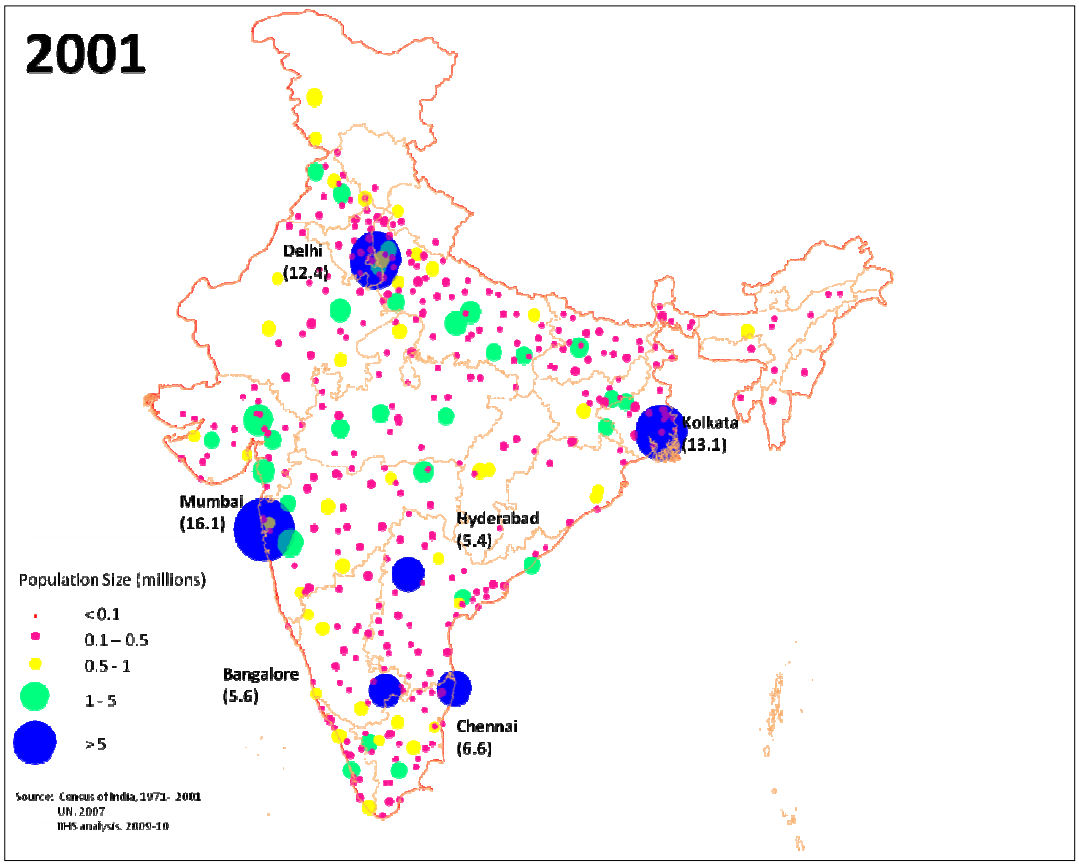
Even at the level of cities, India is currently unable to field an adequate competitor to Singapore, Hong Kong or Dubai as a global financial centre in the intermediate trading time zone between Tokyo and London. This is in spite of the massive concentration of financial institutions, human resources and capital in Mumbai. The binding constraint to Mumbai becoming the financial market aggregator for the rapidly growing South Asian region and a globally competitive centre for financial services offshoring is its dysfunctional urban systems in which nearly 7 million people are forced to live in slums and informal settlements (Mistry et.al., 2007).

India has seen a slower set of changes in its cities and towns than many other regions of the world. A brief geographic overview from 1951 to 2001 shows that change has been steady, but not explosive, unlike parts of Latin America and East Asia during their period of rapid urbanisation.

This is expected to change over the next few decades with an explosion in urban population and growth along with slower structural changes in the economy, human development, national metabolism, environment and polity.

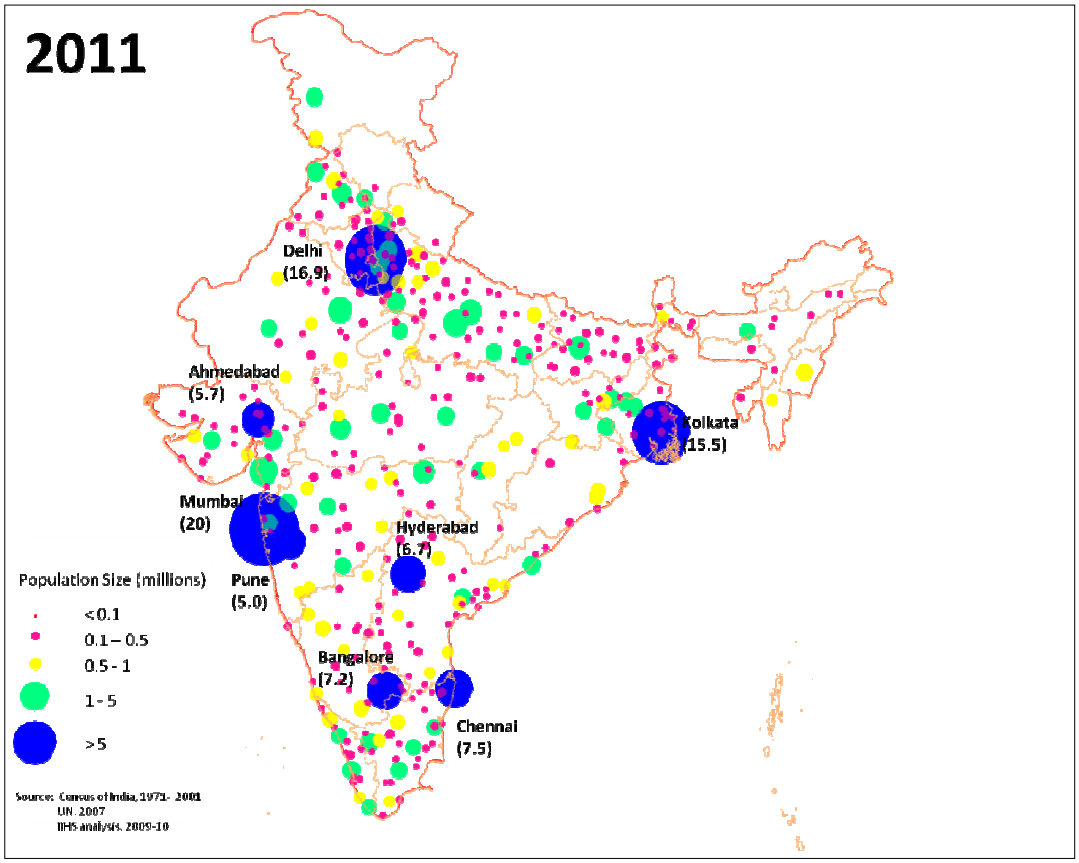
Figure 3: Population of Major Urban Centres (1951-2001)

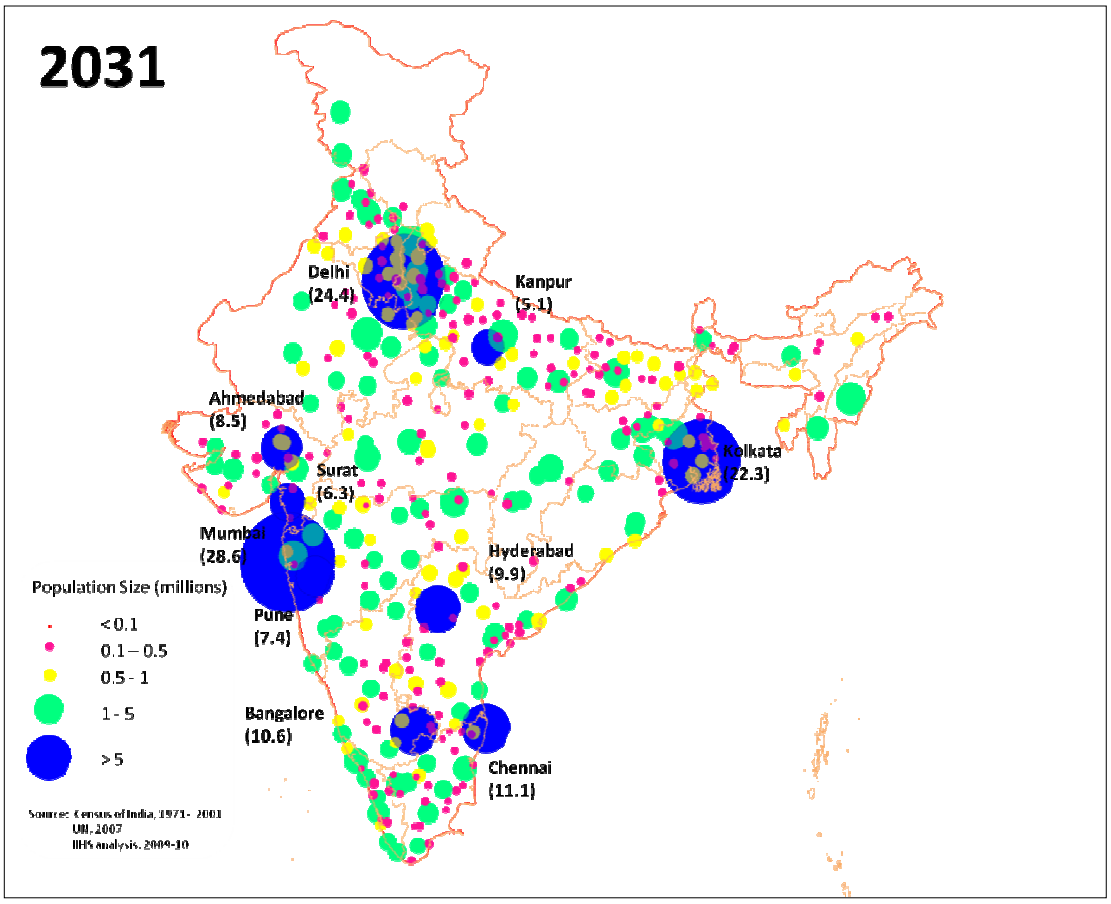




Source: IIHS Analysis, Data from Census (2001)

Figure 4: Projected Population of Major Urban Centres (2011-2031)





Source: IIHS Analysis, Data from Census (2001)

Most national development 'projects', economic planning, political conceptions and governance interventions have focused on a sectoral and thematic approach to development that align well along the siloed administrative structure of the independent Indian state. For those reasons and the particular political imagination that emerged out of India's early years as a Republic, cities and urbanisation have been seen as an intractable challenge by most leaders, administrators and even academics.

Urbanisation is the powerful integrating chain that joins the hidden dots between these processes. If seen in this light, India's urban transformation is a theme that links the other seven transitions that India is going through, and provides an opportunity to construct and new integrative frame. This frame focuses on the lived experience of the transformation as a culture moves from being and imagining itself as being primarily rural and agrarian, to one in which cities and the globalising world that they are connected to, provide an new landscape of possibility.

IV. ENVISIONED META-OUTCOMES

The IIHS' Vision for India in 2030 hinges on the achievement of five non-negotiable meta-outcomes that derive from the aspirations of India's Constitutional settlement (1947-50) and six decades of the Indian development 'project'.

These outcomes represent normative goals for IIHS and they drive the identification of key thematic emphases for teaching, research and practice. While each represents a discrete outcome, they are expected to also act as drivers of change for the latter decades of the 21st century. Each of these meta-outcomes is linked to addressing a range of problem spaces or 'arenas of engagement' that have been outlined in Figure V below:

Figure 5: Meta-Outcomes and Arenas of Engagement

META-OUTCOMES	ARENAS OF ENGAGEMENT
Reduced Poverty and Inequality	1. Inclusive, Expanded and Quality Education 2. Expanded Access to Health 3. Food Security 4. Water Resources and Services
Social Transformation	5. Sustainable Livelihoods and Employment 6. Environmentally Sustainable and Inclusive Economic Growth 7. Improved and Equitable Land Use, Access and Shelter
Environmental Sustainability	8. Accountable and Effective Public Systems and Institutions 9. Sustainable Physical Infrastructure and Services 10. Energy Security and Services
Unified Polity	11. Conservation of Biodiversity 12. Inclusive Socio-Political Cultures 13. Balanced Peri-Urban and Rural-Urban Linkages
Robust and Integrated Economy	14. Access to Justice 15. Enabling Cultures of Innovation, Knowledge and Enterprise 16. Responsible and Pro-Active Regional Geo-Political Engagement

1. Reduced Poverty and Inequality

With close to 270 million people below the poverty line, reduction in both relative and absolute poverty is a non-negotiable goal for India. In spite of recurrent controversies about the short run interaction between globalisation, reform and poverty, it is expected that by the 2030s, calorie-linked poverty ratios and the absolute number of the poor should decline considerably in India (Deaton & Dreze, 2002, Gupta, 2009). This decline in poverty could come as a contested outcome of moderate to high economic growth, urbanisation and a strong emphasis on sustainable livelihood generation combined with a series of largely publicly-funded transfers and risk mitigation measures. Significant asset redistribution is not expected to take place in the current economic and political dispensation.

The caveat, however, is the expected redefinition of poverty in India, to include a range of non-food elements of the consumption basket and entitlements that are effectively guaranteed by the state (e.g. elementary education). This shift in datum may delay the decline in relative and absolute numbers of the poor, but is not expected to change the continuing secular decline, unless a major macro-economic slowdown takes hold of the economy.

Table 1: Percentage and Number of Poor in Urban and Rural India

Year	Poverty Ratio			Number of Poor		
	Rural	Urban	Total	Rural (million)	Urban (million)	Total (million)
1974	56.4	49	54.9	261.3	60	321.3
1978	53.1	45.2	51.3	264.3	64.6	328.9
1983	45.6	40.8	44.5	252	70.9	322.9
1988	39.1	38.2	38.9	231.9	75.2	307
1994	37.3	32.4	36	244	76.3	320.4
2000	27.1	23.6	26.1	193.2	67	260.2
2005	21.8	21.7	21.8	170.3	68.2	238.5

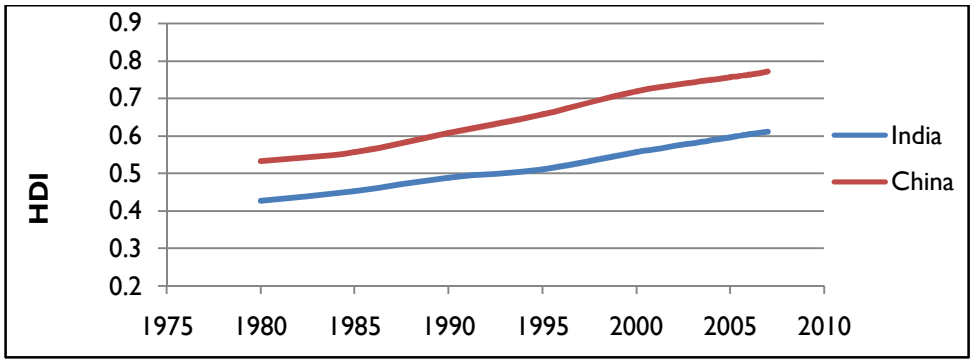
Source: Planning Commission (2010)

Furthermore, a shift should also take place in the primary locus of poverty from rural to urban India, even though large residual pockets of rural poverty can be expected in northern, central and eastern India as an outcome of long-standing regional imbalances, mal-development and demographic dynamics. This shift to increasing numbers of the urban poor will require concomitant shifts in provisioning, appropriate policy measures and introducing safety nets which do not exist at present.

Similarly, improvements in living conditions (housing quality, crowding) and the availability of basic environmental and energy services (water, sanitation, power, solid waste management), and quality school education and health care services are expected with the rise in private investment in housing and continuing restructuring of public service delivery. This will at least require a co-ordinated series of governance, policy and institutional reforms to be put into place to enable security of tenure; the ability to mobilise land effectively and efficiently; functioning land markets and the ability to rationally plan, develop, extend and maintain urban infrastructure and services in the common interest.

The most rapid strides are expected to be taken in the area of human development, especially in schooling with the universalisation of first elementary and then secondary education and significant reduction in gender differentials in schools. The impact of reforms in the higher education sector, if expeditiously enabled, would start being felt in the mid to late 2020s, with a strong impetus to livelihoods and growth in urban areas. The situation of healthcare is less hopeful, because of the effective implosion of the public health care system in many parts of the country. It is also increasingly inaccessible by the poor and vulnerable owing to a sharp increase in pharmaceutical and health service expenses due to strengthening global market links.

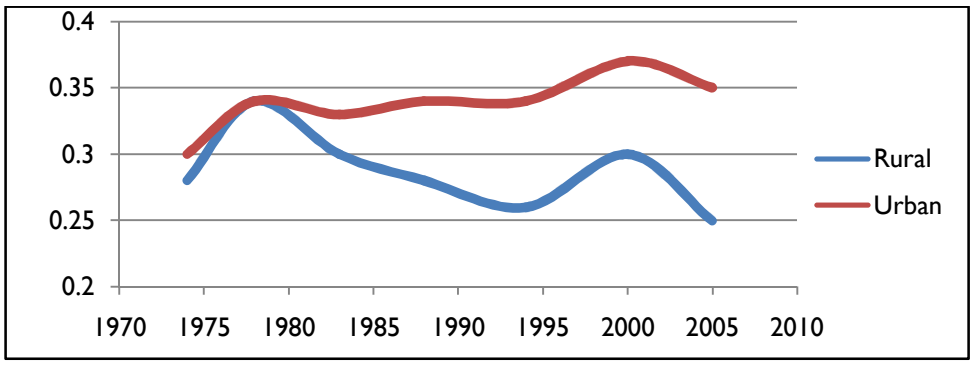
Figure 6: Human Development Index for India and China (1980 - 2007)



Source: Human Development Report (2009)

With its Gini coefficient at 3.2, India is beginning to grapple with income inequality. By all counts, income inequality has been and is increasing. This is not only true of income inequality within the population and across regions but also inequity in terms of opportunities available for the poor, access to services and space, right to urban settlements and the city.

Figure 7: Gini Coefficients in Rural and Urban India over Time (1970-2005)



Source: Planning Commission (2010).

2. Social Transformation

The most important ongoing process of change in India is neither the building and consolidation of the Indian state nor the steady process of economic growth, institutional reform and development but rather the churning of social structure and fabric as modernisation and globalisation 'projects' encounter indigenous processes of social transformation.

The primary target of these processes of transformation is the multiple asymmetries and hierarchies that distinguish Indian society and culture. This translates in everyday practice into social exclusion on grounds of caste, community, gender, ethnicity, age and disability. This is probably the most important constraint to full human, social and economic development of Indian citizens.

The millennial history and ultra-stability of most of the structures, processes and belief systems that underpin the multiple forms of social exclusion in India has made them the target of reform for almost all of recorded history. Contemporary India has altered its terms of engagement with practices such as untouchability and gender discrimination, proscribing them by fiat but economic and social practices have been slow to change.

This is a complex multidimensional set of challenges, hinged around caste and *jati* identity, but closely linked to gender equity, ethnic, linguistic and faith-based identity. It is finally linked to three core areas of contestation and political settlement: rights; entitlements; the transition from mandated political representation to participation and finally, sharing of political, economic and moral power.

Much progress has been made since the drafting of the Indian Constitution but the scale and volume of discrimination and exclusion continues to overwhelm the policies, programmes and instruments that emerged to address them. Mass consciousness around questions of exclusion was generated starting in southern and western India in the 1920s, transiting by the mid-1970s via a series of social movements to eastern, northern and north-western India. It has coalesced into a transformation of post-Independence Indian politics around identity and entitlements, with the state system as a primary site of contestation. There is little contemporary precedence for this scale of political, economic and social engagement,

except possibly for the post-Apartheid transition in South Africa and the ongoing political multi-ethnic and multi-ideological settlement in Nepal.

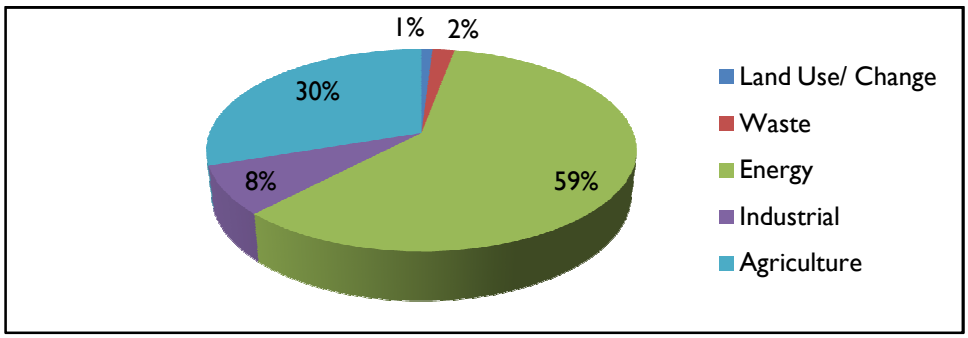
Mobilisation around caste, religious and gender identity and the ongoing political consolidation of the majority backward communities in demographically and politically pivotal states like Uttar Pradesh and Bihar, have initiated a series of processes that will either transform the nature of Indian democracy or force a new Constitutional settlement over the next few decades. No other transformation will unlock so much positive energy. Thus, social transformation lies at the heart of IIHS' vision for India in 2030.

3. Environmental Sustainability

Multiple simultaneous environment-related actions will be required in the first quarter of the century, if serious regional dislocations and sectoral constraints are not to come to the fore. The first is the transformation of India's relationship with water, moving it from an ethical right and free public good to a non-renewable resource that needs to be respected, carefully managed, efficiently used and recycled to have enough left over to maintain ecosystem health and biodiversity. A wide range of legal, regulatory, market, technical and socio-cultural interventions will need to be brought into play to make this a reality. As India's most seriously constrained resource, these changes could have a dramatic impact on food security, ecosystem health and biodiversity.

The next transformation is India's relationship with biomass and fossil energy. A primary driver for this change will be the massive expansion in access and availability of quality, reliable power by the mid-2020s to over 400 million people who do not have it at the moment. Merely universalising access to provide basic 'survival' energy will increase India's domestic energy consumption by a factor of 5. Simultaneously, per-capita energy consumption will increase as middle class consumption increases. Thus, the raising of the access floor of energy will necessitate a radical rethinking of India's energy systems, the role of energy efficiency, smart grids, and the institutional and financial viability of decarbonisation of part or all of its energy supply chain.

Figure 8: GHG Indian Emissions Measured in CO2 Equivalent



Source: CEA and MNRE (2008)

Production and distribution systems of both energy and other goods and services will need to be developed sustainably - the construction of national power and gas grids; distributed power generation through smart micro-grids; the development of wind, solar thermal and solar PV renewables; a redirection of interregional and mass transit transmission systems towards rail and high-efficiency bus systems; a transformation of production processes of key building materials including steel, cement and bricks; the redesign of buildings and urban systems to conserve and produce energy locally and the recycling and reuse of materials that

do not need to enter the solid waste chain - all need to be thought through and implemented.

Simultaneously, rising per capita incomes, prosperity and changing values have placed traditional Indian values like vegetarianism; looking down upon overconsumption and generation of unnecessary waste, under considerable pressure. This has been influenced by the media and recent middle class-led aspiration to a 'good life'. A redefinition of a 'good life' and future lifestyles in the context of Indian culture, sustainability and environmental challenges is a potentially critical area for future engagement.

Even though there has been some stabilisation of India's overall forest cover, addressing the conservation and community-based management of forests will not only help conserve resources but also provide interim livelihoods and support to a large fraction of the indigenous forest-dwelling communities that live within them. As India's poor derive a large portion of their livelihoods and energy needs from the forest, the link between poverty alleviation and forest preservation should be strengthened.

India is still one of the largest repositories of global biodiversity. Conserving and developing these resources, especially in ecological fragile areas under stress, is an area that will require facilitation. Dealing with the global pre-emption of net primary productivity by human communities, and human biodiversity and wildlife conflicts are areas in which India can take a leadership role given its extensive experience in addressing these questions.

India's land sources are under considerable stress especially soil in irrigated, intensely cropped areas. Conservation of soil and water resources, altering agricultural practice policy and irrational subsidies will be crucial in adapting to a changing climate.

Climate change adaptation and mitigation are serious challenges to the future of Indian society, state, the economy and culture. The induced migration of people from semi-arid and arid areas of India (and potentially from adjoining countries) due to the combined impact of drought, flood, cyclonic storms and sea level rise is an imminent threat. India's first public priority will be adaptation, because of the hundreds of millions of people at risk. Subsequently, depending on which direction international climate negotiations proceed in, India may be willing to take a proactive stand on mitigation, if adequate acknowledgement of responsibility, and resource and technological support is available from the OECD.

A necessary condition and challenge for the reduction of poverty, improvement of living conditions and human development; the consolidation of the Indian state and sustained economic growth is the transition of India's biophysical metabolism to greater environmental sustainability over the course of the century.

4. Unified and Robust Polity

The Indian state has made significant progress in its 'project' of political consolidation from a partitioned and almost moth-eaten national territory in 1947 to the creation of the largest stable electoral democracy in human history (Austin, 1999, Frankel, 2005). India is one of only four former colonies that have consistently maintained democratically elected governments since the mid-twentieth century, except for a short engagement with authoritarianism during the 1975-77 Emergency (Panagariya, 2008). It made this traverse discontinuously through many stages and using multiple instruments, especially the:

- Political integration of states and the creation of an Indian version of fiscal federalism (Menon, 1999, Guha, 2008);
- Creation of linguistically determined states and the accommodation of ethnic aspirations,

starting in the mid-1950s and continuing into the present (Guha, 2008);

- Creation of a secular democratic tradition and an active accommodation of religious, political and ethnic minorities, which has come under some strain since the early 1980s and in India's peripheries especially in Kashmir (Habibullah, 2008), the north-eastern states (Hazarika, 1994) and for a while Punjab.
- Building a robust and strongly contested electoral frame, which has a high degree of credibility. India has been able to create a powerful, legitimate and effective form of democracy, which is rather different from its received Western liberal tradition. This has enabled the channelisation of a vibrant and potentially violent process of social transformation into the arena of political contestation, which has largely happened within the Indian Constitutional framework.
- Fillip to political decentralisation with the movement to strong regional politics since the late 1980s and a massively ambitious process of decentralisation via the 73rd (rural) , and 74th (urban) Constitutional amendments which have produced mixed results, especially in urban areas.
- Building and maintaining a strong independent judiciary, which has repeatedly altered the course of political contestation towards strengthening India's Constitutional settlement. The contemporary relationship between the political executive, bureaucracy and the judiciary is somewhat strained due to the ingress of judicial activism into the executive space and increasing public criticism of judicial corruption.
- The development of a strong, vibrant and free press and mass media, now largely in the private sector, with a strong residual element of public broadcasting for remote and rural areas. While the media is strongly influenced and partially control by business interests, it has largely maintained independence from other organs of the state, been responsible for significant political upsets and continues to serve as an important channel of feedback between ordinary citizens, civil society, the private sector and markets and the state.
- Maintenance of its Armed Forces under civilian control and a symbol of Constitutional values, in spite of declining standards of probity since the 1990s. The Armed Forces have in some parts of India have become symbols of state power and oppression, but internal, judicial, media and political checks and balances on excesses are strongly in place. This is a major exception to the history of adjoining countries in South Asia.
- Creating the space for an active and vibrant civil society, social movements and a wide range of formations to innovate and explore new ways of addressing complex economic, social and political challenges that face contemporary India.

India is clearly an idea and polity in the making. The combination of an unbroken global cultural tradition and the creation of the largest and deepest democratic experiment in human history - in an environment of heterogeneous change - places a huge burden of innovation and resilience on India's political, socio-cultural and economic systems.

Even though this appears to be stable and moving forward in a slow and often lurching manner, some regions and a large number of groups have effectively been excluded from this process of change. Addressing their concerns, providing them 'voice' and agency to utilise the Constitutional frame to contest and claim their rights and entitlements will be one of the more difficult tests that the Indian state and polity will face.

5. Inclusive and Integrated Economy

The Indian economy has been rather well insulated from international contagion and shocks, except for the 1991 BoP crisis that triggered the first generation of economic reforms. Appropriate forward looking macro-economic, monetary and fiscal policies that act in the wider and longer term interest could be a considerable asset to India's future growth and development.

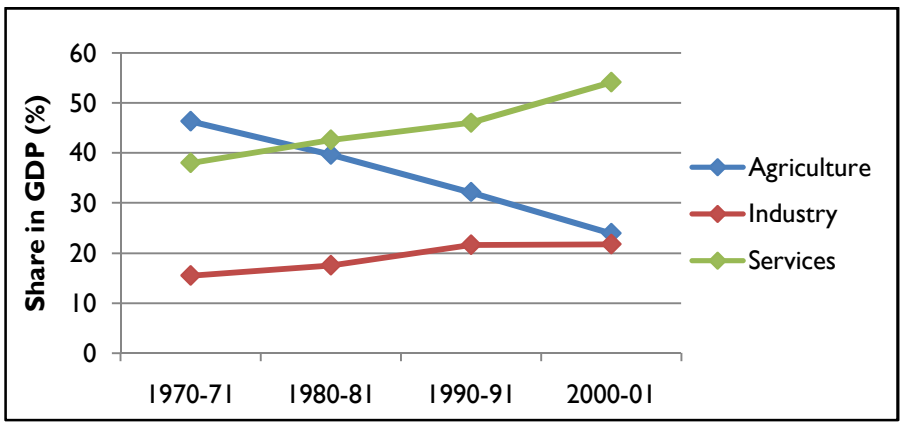
India's planners and economic mangers have been cautious and criticised for not opening up the economy to forces of globalisation and trade too quickly (Panagariya, 2008). This is seen as an important factor in the poverty lag between India and China. On the other hand, India's risk-averse strategy of pursuing a path of moderation vis-a-vis export-led growth and economic openness may well be a long-term asset (Subramanian, 2009).

Inflation has historically been the single most important parameter that effective macro-economic management is measured by in India. This is largely because of the political consequences of inflation on a large population of unorganised sector workers who have no hedge against it. India has been rather effective in handling this in the past, but with the opening up of the economy, the latitude for intervention has reduced. India has similarly made good progress in reducing the fiscal deficit both at the central, and to a lesser extent, the state level. The current global economic slowdown and crisis has put many of the FRBM targets well out of range, because of multiple stimulus packages and deficit financing.

A number of measures have been suggested to further reform the financial sector in India, increase credit access and participation in the formal financial system to a much wider set of participants (Rajan et. al, 2009). The health of India's banking sector is relatively good as are equity markets even though access and participation in both is limited. The development of bond and mortgage markets, insurance and pension sector reforms are cued for the next round of major economic reforms. The question of capital account convertibility and trade is being handled cautiously given the global economic situation and new winds of protectionism that seem to be sweeping the global stage.

Livelihoods have never been central to India's macro-economic policy agenda, partially because of the size of the challenge and the relative stability of the notional unemployment rate in India. This could change over the medium-run as greater movement of the workforce from the primary to secondary and tertiary sectors takes place and social and economic unrest in urban areas becomes a salient challenge.

Figure 9: Sectoral Composition of GDP (1970-2001) at 1993-94 Prices



Source: Sastry, DVS et.al. (2003)

A significant shift from an India of the 1980s has been gradual due to the slow acceptance of the role of enterprise and entrepreneurship in economic development and the building of India's future. The first generation reforms of the early 1990s provided the space for the deregulation of a draconian system of licensing and control. This provided considerable institutional space for both domestic and international enterprises to take on the challenge of meeting domestic and export demand. While there were many short-term failures on the way, it has led to an improvement in the overall economic and regulatory environment even

though it remains well below competitive national standards in ASEAN and East Asian countries (Nilekani, 2008).

India presents an intriguing case of sub-continental economic integration lagging political consolidation. The federal structure of the Indian Constitution, the dominance of planning from the mid-1950s to the early 1990s, and a process of economic centralisation that started in the mid-1970s led to a situation in which multiple barriers were erected against economic integration and the creation of a single national market.

These barriers ranged from restrictions on the sale and movement of grain and agricultural produce by private agencies, irrational freight equalisation subsidies that dis-incentivised efficient resource use, and multiple local and state taxes that made the movement of goods and provision of services difficult with consequent transaction costs and rent seeking.

A series of significant taxation reforms are set to transform India's domestic markets. A Service tax and Value added tax (VAT) have been implemented nationally, in a phased manner in spite of stiff resistance by some state governments. A general sales tax (GST) is expected to be put into place in the next few years, replacing a host of local instruments. This will enable the creation of a relatively frictionless national market, especially when backed with high-end IT-based solutions.

India has among the most efficient equity markets in the world, partially following the creation of the NSE (National Stock Exchange), which is capable of operating on a T+1settlement system. The NSE has almost single-handedly created a deep, efficient and decentralised equity market in India. A similar series of exchanges have been launched by private agencies to create commodity exchanges, where now power is also traded.

India's banking system with its extensive use of IT is also among the more efficient systems in the world with an increasing volume of transactions being undertaken online and remotely and now reaching into the hitherto un-served informal sector. Yet financial accessibility remains a serious challenge for the bulk of the population. A big gap still exists around taking highly asymmetric land markets online, which could also - via disintermediation - slowly push out both political and criminal real estate interests. This would unlock the potential for more rapid and equitable settlement development.

V. ARENAS OF ENGAGEMENT

This section maps a range of problem spaces or 'arenas of engagement', the constraints and opportunities that each pose to enable the meta-outcomes of India Vision 2030 to become a reality.

1. Inclusive, Expanded and Quality Education

Creating effective pathways to expand access to and deliver relevant, creative and inclusive learning at all level

1) *Increased expansion at all levels and scales*

- Achievement of universal primary and secondary school enrolment by mid 2020s;
- Regionally balanced expansion of the tertiary and higher education sector to absorb the large number of school education students and increase the number of 'knowledge workers' (Target GER of 30 by 2030);
- Expansion of distance and open education possibilities and resource sharing. Scale will be achieved at lower cost using technology and leveraging partnerships;
- Expanding teacher training, recruitment, development and education to meet teacher shortfalls and build capacity amidst existing teachers; Ensuring 'teaching' and research is valued as a profession and attracting diaspora and skilled professionals into the sector.

2) *Inclusive education and closing the gap*

- Closing the gaps in enrolment and quality of education for migrating communities, particular districts, inaccessible geographies, conflict areas; tackling gendered, class- and caste-based and religion-mediated barriers to access at all levels of education
- Lowering language-based divisions through innovative learning methods and technologies, increased access to quality non-English learning environments
- Building access to English language skills for those that desire them
- Increasing the number and diversity of learning spaces and institutions; lowering of barriers to entry for private players and increasing the avenues and sites for education (in conjunction with more stringent quality control mechanisms)

3) *Making Learning Relevant to Livelihoods*

- Expansion of vocational, technical non-formal and adult education delivered through innovative spaces and institutions to ensure stronger connections to existing and future livelihoods across skill levels.
- Tailoring learning to particular and diverse livelihood needs and re-thinking curricular and pedagogical methods to retain and bring back working learners.

4) *Excellence of teaching and learning*

- Learning of a higher quality and relevance to a diverse set of learners; new curriculum development and initiatives at all levels ensuring plurality of views, methods, learning environments and a broader shift to learner-centric education;
- Focus on inter-disciplinarity and the application of learning to complex, real-world problems or 'wicked' problems.

5) *Management of Educational Infrastructures*

- Better facility management of public schools systems, in particular from human resource to infrastructure and operations;
- Better linkages across scales – local, state and national.

Education: Challenges and Opportunities

India's education transition will proceed from the universalisation of elementary education in the middle of the 2010s (Planning Commission, 2002), to the near universal provision of secondary education by the mid-2020s (MHRD, 2005). In this period tertiary and higher education will need to expand rapidly, both to absorb increasing number of students completing secondary school and to propel the knowledge economy. The scale of this education transition dwarfs the creation of human capital in both size and quality in any other location or period of human history (Hughes & Hillibrand, 2006).

Expanding Access and Inclusion

India finally rose to addressing the challenge of illiteracy and inaccessibility of school education through a massive publicly funded programme to universalise elementary education in the 1990s. Through public school building, a universal programme of school nutrition, massive teacher recruitment, and the rapid growth of private school education in the last decade, a number of supply-sided constraints have been released. Since the Right to Education was operationalised in 2010, it is largely funded by access on income tax and additional budgetary support.

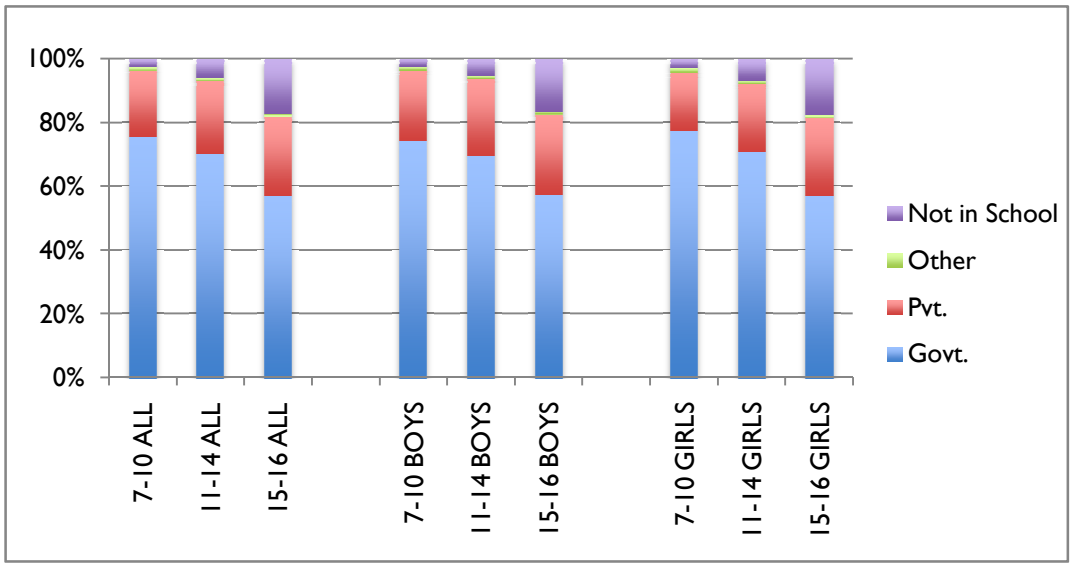
That being said, universalized education still needs to be operationalised and large gaps across regions, migrating communities, inaccessible geographies, conflict areas; gender, caste and religion remain. In addition, existing infrastructure, particularly public educational infrastructures, face a critical challenge in operations, management, and maintenance. These are not trivial concerns: the mismanagement and lack of everyday functional capabilities of primary and secondary schools as well as Universities significantly impede the quality, access and, often, the sheer possibility of learning for many.

New and Relevant Learning

In addition to access, quality remains a big challenge for Indian education at all levels. Didactic and pedantic education cultures, outdated knowledge sets, strict disciplinary silos, abstraction and disconnect from contemporary ground realities, curricular mismatches at each level but particularly in tertiary education are serious constraints to enable education quality and learning outcomes. The development of a child-centred national school curriculum that engages with contemporary challenges in an integrated manner has been a great leap forward (NCF, 2005). The serious constraint of quality and supply of school teachers and teacher education could become a serious impediment to India's longer term development aspirations (Batra, 2007) and poses a severe challenge to transacting this innovative learner-centric curriculum.

While supply side constraints have been somewhat relieved, they have been accompanied by a concomitant rise in effective private demand for quality education, often tied to learning some form of English. This has led to the proliferation of private schools (some of rather dubious quality) as the supply of quality public education is less than the demand. The need to develop strict yet appropriately dynamic and open-minded regulation has been hastened by such high levels of access of private, often local, school systems by the poor and non-poor alike.

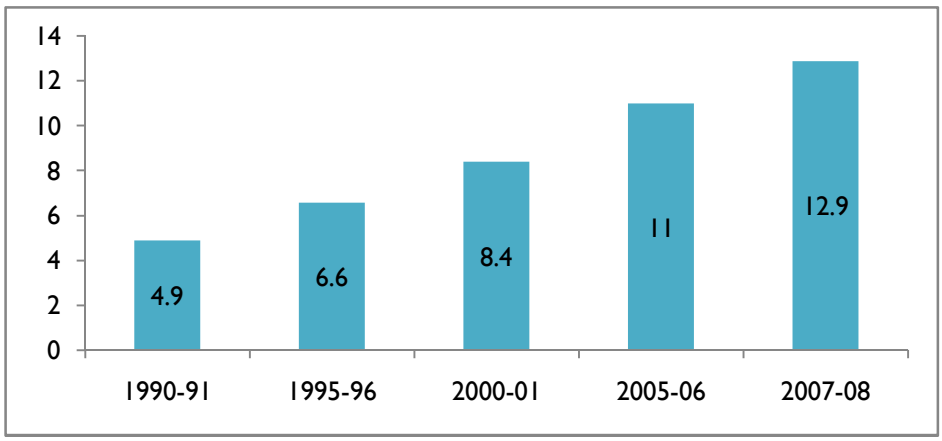
Figure 10: Children in Different Types of Schools (2009)



Note: 'other' includes children going to madrassa and EGS. 'Not in School' = dropped out + never enrolled
Source: ASER (2009)

The increase of English-oriented learning is both an opportunity and a matter of concern. The political economy of vastly different returns to education in English versus Indian languages has only widened in recent history. The consequences of this are felt across the education sector: in access; in perceived and actual relevance; in the decision (especially for the poor) to invest in education; in political and social cultures; in livelihood impacts and in the ability to transition from secondary to tertiary learning. The absence of strong tertiary sector institutions offering quality learning in Indian languages and the relative absence of support of research in these languages need to be addressed.

Figure 11: Enrolment in Higher Education (in millions) (1990-2008)



Source: Aggarwal (2009)

These questions are equally relevant for India's higher education sector which, in spite of its scale and the apparent depth and quality of its elite institutions like the IITs and IIMs is under-resourced, mal-regulated and of poor quality (NKC, 2009). India needs to initiate a comprehensive nationwide Higher Education sector development and reform to prepare for leadership of the new global knowledge economy, enable access and inclusion and meet the aspirations of a new generation of young learners and voters who are products of the universalisation of school education. These reforms will require large amounts of public and

private investments. The impact of these reforms in the higher education sector, if expeditiously enabled would only start being felt in the mid to late 2020s.

Learning and Livelihoods

By the late 2040s, India will surpass China as the country with the largest pool of school-educated workers propelling it to the stature of a global manufacturing power. Yet its ability to cater to and take advantage of this population of learners and workers is in doubt. India suffers from insufficient diversity (and flexibility) in learning institutions and types of education at all levels. The lack effective of adult and continuing education, has led to widening gaps between learning and livelihoods, particularly for "low" or "semi" skilled professions that are open to the poor. Learning and formal education have been unable to appear and to be relevant for a large number of excluded and potential learners.

This gap is particularly true of rural workers. By the 2030s - largely because of increasing life expectancy combined with poor performance in Indian education from the 1950s to 1980s – a few hundred million aging and poorly educated rural workers could be trapped in low productivity subsistence occupations in northern and eastern India as their children migrate in search of new opportunities. This could lead to a serious social and economic crisis, potentially as large as what China is experiencing with its massive migration of workers from western and central China is search of livelihoods in the more prosperous coastal regions and the potential social and economic instability that results with slowing of economic growth (Revi, 2006).

At the other end of the spectrum, tertiary knowledge workers are also increasing in number. India has already surpassed Russia, Japan and very soon, will have outstripped the EU in sheer number of potential knowledge workers. By the 2020s, with over 100 million university graduates, India will close to match the United States in numbers of such workers, but at a lower skill and potential productivity because of the poor quality of its higher education.

In spite of the large share of the services sector in economic output, India's transition into a western-style tertiary-education dominated knowledge economy over the early part of the 21st century is unlikely. It is thus critical, even in the times of increasing and near universal enrolment, that the focus of education remains on questions of inclusion and deepening, quality and curriculum, as well as the need for innovative learning spaces.

2. Access to Health

Creating institutional and financial mechanisms to enable expansion of and innovation in preventative and curative health service delivery at all levels

1) Expansion of Scale, Spread and Access

- Significantly expanded investment into primary and secondary health systems and infrastructures, particularly targeting regional imbalances;
- Strengthening rights-based approaches to health, especially to primary and basic health services, based on a notion of health as a public good;
- Protecting and expanding affordable and inclusive access, especially for the poor, through innovative pricing and expansive health insurance;
- Targeting gender, caste, ability, and identity-based barriers to care-seeking;
- Creating an expansive urban primary health care system.

2) Innovations in Health Services Delivery and Management

- Significant improvements in facilities, day-to-day and infrastructural management of health systems, particularly public systems, at the primary and secondary level;
- Expanding human resource capacity to create large numbers of health professionals at all scales;
- Recognising and building capacity of multiple types of care providers, including those not trained in formal institutions;
- Integrating health as an input into environmental and infrastructural systems design and planning.

3) Tackling Dual Disease Burdens

- Improving health outcomes and eliminating deaths due to infectious and communicable diseases like diarrhoea and TB;
- Recognising and combating emerging lifestyle diseases like cardiovascular diseases, obesity and mental health that place disproportionate burden on health systems.

4) Focus on Preventative and Holistic Health Care

- Longer-term nutritional enhancement and education to reverse generational malnutrition;
- Tackling environmental factors leading to lower morbidity and mortality including sanitation, education, food and water supply;
- Greater emphasis on access to basic services, sanitation and water in urban areas.

Health: Challenges and Opportunities

India has experienced steady improvement in the health status of its citizens, with current life expectancy at birth close to 70, compared to 45 in 1951, due to improved nutrition, environmental health, preventive and curative health care services (Planning Commission, 2002). Yet significant challenges remain. Access to health care – due to both supply and demand-side factors – remains deeply skewed by region, location, class, gender, caste, religion and ability and highly insufficient especially at the primary and secondary levels. Deaths due to preventable, communicable and infectious disease remain unacceptably high and insufficient progress has been made on nutrition and well-being, especially for the poor. Significantly, environmental and infrastructural systems continue to be weak and compound morbidity and disease levels diluting gains from better curative health services and new technologies as well impacting the well-being, productivity and capabilities of hundreds of millions of citizens.

Improving Health Outcomes and Tackling Dual Disease Burdens

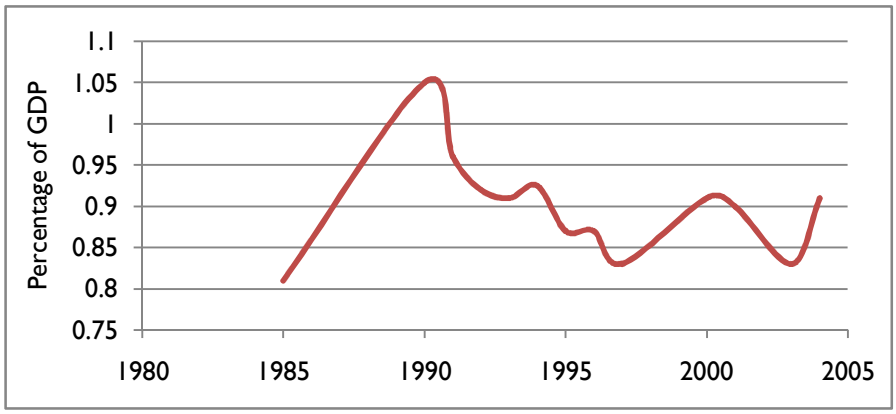
Health outcomes in India have had limited improvement in the last decade, and large variations remain along the lines of state, region, caste, gender and religion. For example, life expectancy is now at 64.1 years for males and 66 years for females but it ranges from 73 years in Kerala to 55-60 in states like Bihar, Assam, Madhya Pradesh, Uttar Pradesh (WHO, 2005). Infant mortality rate has declined in India from 70 infants per 1000 live births in 1999 (SRS) to 57 per 1000 live births in 2005-06. India's morbidity rates remain high: with around 2,468 persons per 100,000 populations suffering from asthma, 544 per 100,000 populations suffering from TB, 1361 persons per 100,000 populations from Jaundice, and 3,697 persons per 100,000 populations from malaria (NHFS II, 1999). A third of adult women report to have below average body mass index. All these diseases vary and differ from state to state depending on the risk exposure and vulnerabilities of the population and access to health care services.

India is experiencing a classic dual burden of disease as its health transition accelerates. The burden of lifestyle diseases on health systems is becoming increasingly significant. Simultaneously, there has been limited decline in infectious and communicable disease and maternal conditions and morbidity due to infectious diseases continue to be high. Within the health system, cardiovascular disease and mental illness now make up a greater share of the disease burden than diarrhoea, TB or other childhood diseases (MoHFW, 2005). Balancing between these two types of diseases burdens through a period of demographic transition will require enlightened, dynamic and flexible policy and regulatory frames.

Improving Public Health Systems and Expanding Care

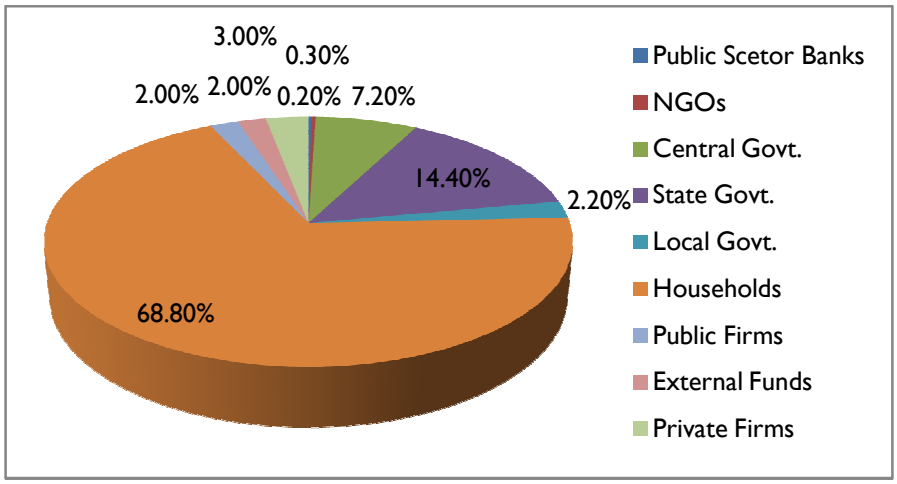
Unlike education, health systems in India have not seen the necessary infusion of financial and infrastructural investment particularly within public systems. Health spending amounts to less than 1 percent of GDP. Health expenditures rose in the mid 1980s but deteriorated due to the austerity measures the government undertook under the fiscal stress it experienced later that decade. By 2001-02, the relative allocation to the sector had reached levels prevailing in the mid 1970s. Thus, a large proportion of health expenditures continue to be borne by households. Despite this, public spending on health has played a major role in the expansion of health services, particularly Primary Health Care (PHC) Clinics.

Figure 12: Trends in Public Health Spending



Source: Rao et. al. (2005)

Figure 13: Sources of Finance in the Health Sector during 2001-02



Source: Rao et. al. (2005)

The absence of public health insurance and social security nets implies a significant burden on public health systems and informal, unregulated care providers for the poor. India is facing multiple challenges from its dysfunctional health care system, with the virtual implosion of primary public health care in many parts of the country, including in urban areas where it was weak or non-existent in the first place. There are strong regional exceptions to this, both in terms of high performing states where health systems are robust and effective[i] and large-scale policy drivers like the recent National Rural Health Mission (NHRM). These need to be built upon and expanded, with particular attention to scaling and transposing successful interventions.

Yet financial investment alone is insufficient. Perceptions of low quality of care, poor facilities and day-to-day management, and critical infrastructural constraints need more than just financial infusion. There is an urgent need to build management and operations capacity within public health systems especially given that supply side expansions are still critically needed. There is a parallel need to rebuild people's faith in the public health system, especially amidst poor and marginalised communities. Innovative systems that interface with informal and unregulated care providers who the poor currently access in larger and larger numbers, or with local and traditional care-givers like *dais*, have been successful in building bridges back to the public health system in many areas.

Re-thinking Health Systems: New Needs, Actors and Challenges

Deepening challenges in addressing under-nutrition of children and mothers, the universalisation of immunisation, very slow progress on sanitation coverage and improvement in health care behaviour are forcing a reconceptualisation and reform of current health systems in the country. A similar cross-sectoral reform process in urban India is moving very slowly because of the severe lack of human resources and institutional capacity.

The vast and expanding human resource gap in the range of care providers is a first stumbling block to achieving well-being for a majority of Indian citizens by 2030. Studies have shown that there are only 5 doctors and 13 nurses/midwives per 10,000 people (WHO, 2006). A healthcare provider is available per sixteen villages and only 20 percent of India's hospital beds are located in rural areas. 7 percent Primary Health Care clinics are without a doctor, and 40 percent and 14 percent are without lab technicians and pharmacists, respectively (Bhandari and Dutta, 2007). Innovations to increase capacity must recognise the need for training at different skill levels, in both formal and informal institutions and settings towards a range of care providers. Interfacing with existing traditional or local care providers is critical given that they are already points of access within many communities and underserved areas where health systems are either dysfunctional, not trusted or simply absent.

Much of these policy and system responses must be based on a 'rights and entitlements' based approach to health. The current political economic climate in urban India has seen the weakening of rights-based claims to health and the advent of user fees and individual responsibility based health policies. The emergence of multiple private players in urban areas has enabled access to advanced curative systems for the well-off but the rising cost of accessing health care has negatively impacted access by the poor. The impact of this rising cost weakens the right to health and without increasing options of affordable access, inequities in health outcomes will only worsen.

Finally, environmental and infrastructural failures, particularly with regard to sanitation, water and food supply as well access to shelter in urban areas, make it clear that health outcomes will not be attainable without simultaneous improvements in infrastructure and service delivery that reduces morbidity and mortality levels. Health must be integrated into infrastructural design, planning and management and health impacts seen as a critical part of evaluating and investing in systems. Health, therefore, cannot be approached narrowly using a sectoral approach and must be seen as part of a larger social and infrastructural set of policies, alongside a movement for social transformation that addresses demand side concerns.

3. Food Security

Increasing food access, security and nutrition levels especially for the most vulnerable via sustainable productivity gains; appropriate technologies and knowledge systems; credit and market access; and effective and equitable distribution systems

1) Increase food production for self sufficiency

- Prevent and reverse decline in agricultural productivity;
- Increase efficiency in land and water use;
- Promote improved technology, food production practices and biological varieties;
- Improve agricultural biodiversity for overall resilience and maintenance of land health;
- Prevent further environmental degradation (soil and water) and create mechanisms to adapt to climate change.

2) Promote rural livelihoods

- Make food production a viable livelihood by ensuring adequate price structures and easy access to credit;
- Consolidate land in order to ensure sustainability and efficiency of land usage;
- Increase security of tenure and access to land especially for small and marginal farmers by exploring innovative titling and land access practices;
- Promote of non-farm activities in rural areas to ensure adequate levels of rural year-round employment.

3) Improve distribution and integration with urban systems

- Improve infrastructure for the transportation, storage and processing of food;
- Encourage urban and peri-urban food production and utilise opportunities for nutrient cycling from urban waste streams;
- Reform public distribution systems and facilitate better monitoring in order to limit wastage and leaks.
- Promote integrated supply chains to the market that aggregate value at the producer.

4) Facilitate policy interventions

- Enable food producers to cope with international trade regimes and make food production viable in the face of competition from bio-fuels;
- Enact legislations like the proposed Right to Food Bill to make food security a central responsibility of the State;
- Reform market asymmetries and distortions especially with respect to power and water sectors.

Food Security: Challenges and Opportunities

Maintaining national food self-sufficiency has been one of India's significant development achievements since the 1960s. It is unclear, however, whether India will be able to maintain current levels of food security into the 2030s because of water availability, soil fertility loss, land fractionation and growing agrarian challenges in many semi-arid and marginal areas alongside a steady rise in population. India has the largest irrigated cropland area in the world, but low and declining productivity, high post-harvest and delivery losses, constrained agricultural markets and poor access to credit, and the lack of technology and risk sharing instruments outside agriculturally well-developed areas have constrained the expansion of the Green revolution to regions like eastern India that need it the most (MSSRF, 2004).

Food security is defined as the adequate availability of, and access to, food. While India on the whole produces sufficient food to meet the needs of its population, access is still inadequate as purchasing power of the poor is low and distribution systems are dysfunctional. India's agriculture and food policy has to negotiate a complex terrain with immense national variation in productivity, entrenched poverty of farmers with limited ability and incentives to invest, incompatible state boundaries and ecological zones, the coexistence of multiple agricultural practices, environmental degradation, and resource constraints. The Right to Food Bill is the first critically needed policy step to acknowledge this gap between overall self-sufficiency and individual food security for many.

Increased food production for self-sufficiency

The Green Revolution enabled India to become self-sufficient in terms of food production by the 1970s (Planning Commission, 2002) and growth in food production has surpassed population growth ever since. This has mostly been made possible through agricultural intensification: there has been a 2.5 fold increase in crop production without any increase in land under cultivation (Revi, 2007).

In order for India to meet the demands of its growing population (with higher incomes and more diverse diets), agricultural growth will have to continue. However, the environmental fall-out of the Green Revolution has meant that this challenge will have to be met by increasing productivity in areas like Uttar Pradesh, Bihar and West Bengal as productivity falls in the old Green Revolution states of Punjab and Haryana (MSSRF, 2002). There is some hope of reversing the latter decline, however, with steadily falling levels of pesticide use since the 1980s across the two states (Revi, 2007).

Thus, to maintain long-term food self-sufficiency and resilience, overall land health has to be maintained by promoting improved food-production practices, better biological varieties and technology while protecting farm biodiversity. Adequate incentives are required to promote cultivation of a wider palette of crops, since left to purely market forces, farmers gravitate towards those that offer higher returns even though they may need increased inputs of water, fertilizers and pesticide.

An important asset is that, even during a period of increasing global food scarcity, India can be expected to maintain its political commitments on self sufficiency, agricultural subsidies and trade due to the large political interests represented by agrarian voters and the high political sensitivity to food inflation, especially in urban areas.

Agriculture and Rural Livelihoods

Growth in the agricultural sector is necessary not only for food self-sufficiency but also to generate income and purchasing power among the rural population. India's economic and

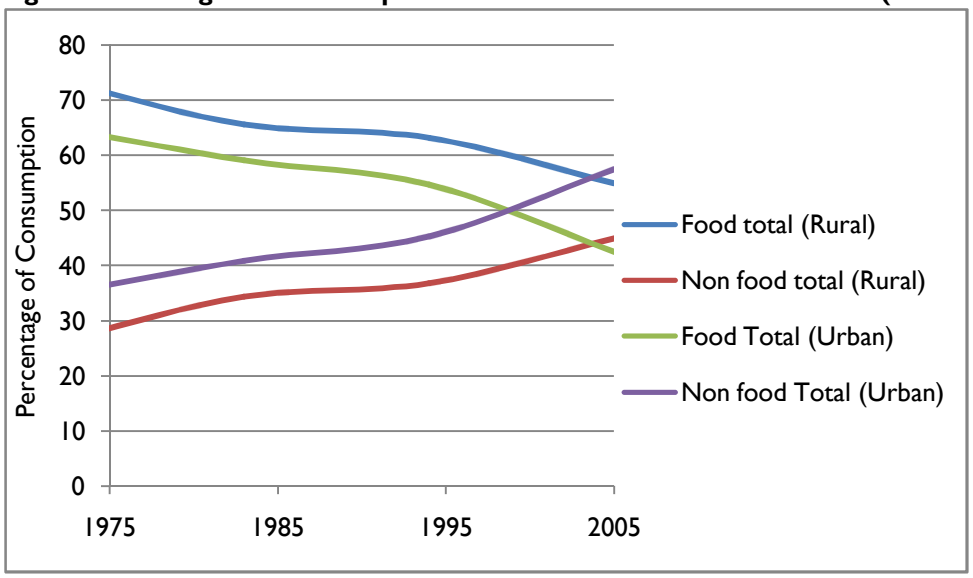
livelihood structure are mismatched: the former is only 16 percent of total GDP but employs more than half of the total workforce (Planning Commission, 2002). Rural livelihoods are increasingly threatened due to reduced and unpredictable returns from the sale of produce and vulnerability due to lack of access to reasonable credit systems; only 27percentpercent of cultivator households receive credit from formal institutions (Planning Commission, 2007). As the rural population grows, there is increasing fragmentation of land and a resultant decrease in the efficiency of food production. These pressures, coupled with the seasonal variance in employment opportunities, force people from rural areas to migrate in search of jobs. Non-farm employment opportunities need to be promoted in order to ensure adequate levels of year round employment while also reducing risk of land fragmentation.

The other critical intervention needed in rural areas is access to credit on fair and reasonable terms from formal institutions that are themselves reasonably protected against risk. The thousands of farmer suicides across the country due to unmanageable levels of debt are an unacceptable and shameful indication of the severity of rising input costs, weak market linkages, the near absence of social security and the paucity of fair credit.

Improve distribution and promote integration with urban systems

Although India is close to self-sufficiency in food production, inefficiencies in public distribution systems and lack of adequate monitoring practices cause tremendous wastage and a resulting shortfall in actual supply (MSSRF, 2002). Thus the operational gap between the food produced and calorific intake is high and the total food grain consumption, expenditure on food, and calorific intake has been declining (Deaton and Dreze, 2009). However, although rates of mal and under-nutrition are falling, nearly 47 percent of all Indian children are undernourished and 52 percent of adult women are anaemic (Dreze, 2004). Overall food security, therefore, depends critically on the substantial structural overhaul of public distribution systems.

Figure 14: Changes in Consumption Patterns in Rural and Urban India (1975-2005)



Source: Panda, M. and Ganesh-Kumar, A. (2009)

Furthermore, urban centres need to be better integrated into overall food production and distribution systems. Adequate investment has to be channelled towards improving infrastructure for transportation and food processing in order to keep post-harvest losses low for rural food producers. Opportunities for urban and peri-urban food production need

to be fully explored since this could effectively shorten the supply chain while also taking advantage of the potential for nutrient cycling inherent in urban waste streams.

Water and Climate change

The government has long provided large electricity and water subsidies to rural India. The reduction of such subsidies is environmentally and fiscally necessary but politically close to impossible. Long term food security remains threatened due to unsustainable uses of water in agriculture and a rapidly decreasing water table (Planning Commission, 2007). The opportunity of building large multi-purpose dams for irrigation has been close to exhausted; high population density in conjunction with high reliance on agriculture has led to limited choices for water resource development and watershed management.

Simultaneously, climate change through its impact on rainfall patterns, soil moisture content, and temperature is likely to impact agriculture in varied ways. Projections suggest growth in certain crops in certain states (e.g. millet) and falls in yields of other (e.g. wheat and sugarcane) (World Bank, 2008). The increased unpredictability of the onset of the monsoons could increasingly result in large crop losses against which farmers will need to be insured.

Facilitate policy interventions

International trade regimes with their inherent asymmetries of incentives and subsidies and increasing competition from the bio-fuels sector are recent phenomena that food production in India has had to deal with. Appropriate policy interventions are required to protect rural livelihoods and agricultural land from such pressures to ensure long term food security and self-sufficiency. India has been leading negotiations for better international agricultural terms of trade at the global GATT conference amongst other venues, but so far unsuccessfully. Domestically as well, many of the interventions and responses discussed above, need enabling macro-policy and legal frameworks to be adopted and put in place. Among these, market restructuring and reforms in the power and water sectors are primary to remove distortions and asymmetries. Food security is closely linked to water and power efficiency in India because of the importance of groundwater based irrigation in food production. Irrational subsidies on water and power have made it very difficult to change use and consumption patterns and practices. This subsidy nexus, however, is at the heart of a complex series of institutional reform challenges in the power and water sectors that India has not been willing to bite the political bullet on.

4. Water Resources and Services

Accessibility, Security and Sustainable Management of Water Resources

1) Providing access to safe water and sanitation

- Providing safe drinking water and sanitation for all and limiting wastage through improved monitoring;
- Formulating the 'Right to Water' as a fundamental right.

2) Promoting conservation and integrated management practices

- Reducing overall water demand;
- Integrating watershed management, public works and rural development programs;
- Ensuring land and forest health by promoting Panchayati Raj Institutions and community-based management practices;
- Reviving traditional systems of water harvesting and management wherever applicable and feasible.

3) Limiting environmental and social damage

- Preventing and over extraction and water pollution;
- Limiting damage caused by poorly designed and executed water resource development projects;
- Reorienting urban planning with a focus on water conservation and recycling;
- Integrated environmental services delivery for urban areas;
- Reducing inappropriate cultivation of water-intensive crops.

4) Facilitating policy interventions

- Formulating a National Water Policy;
- Negotiating acceptable solutions to domestic and international water sharing disputes;
- Reforming pricing and ground water regulations;
- Reforming the power and agricultural sectors to minimise wastage of water resources.

Water Resources and Services: Challenges and Opportunities

India is going to face a conflicted and challenging terrain with respect to water management in the coming decades. The Ministry of Water Resources predicts a 56percent rise in irrigation demand, a doubling of drinking water demand and a five-fold increase of water demand by industry. Simultaneously, the per capita surface water availability is expected to fall from 1,902 cu.m. in 2001 to 1,191 cu.m. by 2050 (Mahanta, 2009).

India's overall water scarcity and growing water demand has led to a steady pre-emption of most surface sources leading to an extensive depletion of groundwater and water flows that are insufficient to maintain many aquatic ecosystems. The drought risk to Indian cities is an emerging challenge with many large metropolitan centres drawing water from hundreds of kilometres combined with hundred of meters of pumping. Further, highly variable rainfall in semi-arid and arid India has serious implications for agricultural productivity and deepening rural poverty. Efficient management of water resources is therefore crucial to poverty alleviation and food and livelihood security.

Water policy in India over the next few decades will have to focus on equitable access, better management, enabling rapid strides in water conservation and recycling, building an institution regime that operationalises efficiency, and minimising water conflicts.

Providing access to clean drinking water

Providing safe drinking water and sanitation to all could be one of India's the most significant development outcomes over the next 20 years. Some progress has been in made in providing sustainable access to clean water in the last few decades – from 70percent percentin 1994 to 84percent in 2004 (HDR, 2006) – although substantial disparities remain in the use of water across income levels. Current distribution is highly variegated: low income and informal settlements have little or no access to water supply from the municipalities, and often pay more to get water from other sources. Rather than focusing on achieving 24X7 water supply, it is critical to shift and manage demand in a way that will make it easier to meet the requirements of a growing population.

Table 2: Status and Targets for Water Supply and Sewerage

	Status and Targets for Water Supply		**Status and Targets for Sewerage**	
Indicator	2010 (%)	2015 (%)	2010 (%)	2015 (%)
Coverage	75	100	80	100
Access	75	100	60	100
Treatment & Disposal	NA		50	100
Recycling			30	50
Supply (hrs/day)	12	24	NA	
Quantity (lpcd)	160	160		
Non revenue Water	30	30		
Cost recovery	80	80	80	100

Source: India Urban Poverty Report 2009

Although programmes like the Rajiv Gandhi National Drinking Water Mission have expanded access to water in rural regions, serious concerns about water quality remain due to issues like arsenic and fluoride poisoning. Even in urban regions which have adequate supply of water, concerns about quality ensure that that bottled drinking water and water purification are likely to become a sizeable industry.

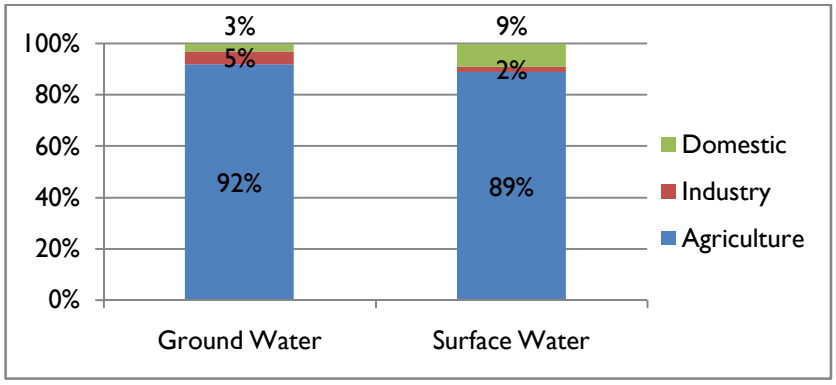
Rights-based approaches to water access have not been significantly adopted in India. The 'Right to Water' is at present subsumed within the 'Right to Life' in the constitution (Iyer, 2007). Articulating it separately as a legally enforceable right is a needed policy step towards ensuring safe water to all.

Promoting conservation and integrated management practices

India is a traditional water economy with 70 percent of its water being used for agriculture (Narain, 2006). There are large networks of individually owned and operated wells and tube wells in rural areas for this purpose. In the present situation where land-owners have rights to subsurface aquifers, there is a dramatic depletion of ground water in both urban and rural areas (Planning Commission, 2009). While lack of reforms in the power sector encourages farmers to overuse ground water, lack of adequate and equitable pricing strategies encourages wastage in urban areas. There is no policy in place to manage these large and diverse numbers of water users.

Extremely low flat tariffs for water across urban and rural areas and unsuccessful attempts at metering water consumption have resulted in poor demand side management of water. Current pricing systems of water do not facilitate conservation as most users pay for water on a flat rate with no incentive to save water or fix leakages. Attempts at privatising water have been met with fierce opposition (e.g. in Delhi) but it is likely that more privatisation will take place.

Figure 15: Surface and Ground Water Withdrawals by Sector



Source: Earth Trends 2001, World Resources Institute

Present patterns of urbanisationurbanisation and urban planning practices both rely on long distance transportation of water or indiscriminate mining of aquifers for ground water. There is little conjoined management of surface and ground water. In addition, there are tremendous losses of water in distribution. Water recycling is rarely practiced and in majority of cases waste-water, sewage and storm water are combined, partially treated and drained to the nearest canal or river leading to extensive pollution. At the city level, the sewerage facilities are grossly short of requirements; no city in India has 100 percent sewage collection or treatment. Untreated sewage disposal is the single largest point source of pollution in India and has far reaching health effects. Inadequate storm water drainage and the frequent mixing of storm water with sewage also leads to local inundation.

Both planning and changes in water conservation practices need to change to respond to these challenges. Urban infrastructure planning needs to integrate nutrient recovery from urban waste streams through urban food production while also promoting adequate recharge of groundwater through rainwater harvesting measures. Integrated environmental services planning needs to find its way out of a current stasis caused by the presence of

multiple institutions in urban areas and fragmentation of responsibility. Significant incentives are also needed in order to encourage industries and households to recycle water as far as possible.

Limiting Large Scale Water Infrastructure and Systems

Much of the emphasis in the past has been on large-scale supply side 'Water Resource Development' projects which come with their own huge environmental and social costs. Large dams are supposed to provide flood control, water for irrigation and electricity, but it is evident that they cannot achieve all three aims together (Caldecott, 2007). Lack of adequate and satisfactory resettlement programs have also exacerbated the social fallout of such large projects. A narrow 'engineering' dominated view guides the approach to natural water systems as is reflected in proposals like the River Interlinking Project (Iyer, 2007). If the outcome of the next two decades is to be any different, there has to be a significant change in the mindsets that underlie interventions in natural water systems.

Although large irrigation projects have provided much needed relief in many regions, they have also resulted in new problems related to waste water management and water logging. Many projects have inadvertently encouraged farmers to adopt water intensive crops (e.g. paddy in Punjab) and farming methods. In addition to leading to an even greater demand for fresh water, it has also led to increased water logging and soil salinity in places like Rajasthan, Haryana and Punjab (Iyer, 2007).

Traditional water management systems need to be revived wherever possible in order to augment conventional water supply projects. Due to the strong seasonal variation in rainfall pattern, many semi-arid regions are caught in an alternating drought-flood cycle that can be avoided only through careful maintenance of land and forest health. Community-based projects through Panchayati Raj Institutions have a big role to play in such initiatives and some amount of progress has already been made on this front (Planning Commission, 2009). With effective planning and co-ordination, work carried out under programs like NREGA can contribute substantially to this.

Water Politics and Property Rights

Water sharing has been a source of continued tension in the international arena and India is still in the process of negotiating water use agreements with countries like Nepal. While the Indus Water Treaty is cited as an example of a successful treaty, the Ganges Water Sharing Treaty with Bangladesh has often been a cause for strained geopolitical ties. In the domestic sphere, a National Water Policy needs to be articulated in order to uniformly address issues related to water-sharing between upper and lower riparian states, water quality, pollution, pricing and ownership of surface and ground water sources. (Iyer, 2007) Conflicts between states – the Kaveri river water sharing dispute between Tamil Nadu and Karnataka – lead to persistently inefficient use and distribution.

Climate Change

Climate change is likely to alter the timing, availability and quality of rainfall and exacerbate regional variations in water availability: making dry areas dryer and wet areas wetter. Simultaneously the anticipated rapid melting of glaciers in the next decades could complicate water availability in river basins through increased flooding followed by a drying out. Salinity of groundwater in coastal areas is likely to increase due to increases in sea level and over-exploitation of fresh water sources.

5. Sustainable Livelihoods and Employment

Expanded, flexible, safe and supported/protected livelihood opportunities for all

1) *Creating Enabling Employment Conditions*

- Expanding flexible, and supportive legislation and regulation for formal and informal work that recognise, encourage and protect different kinds of work and institutionalise benefits;
- Institutionalising and protecting human and labour rights as well as entitlements for formal and informal work, particularly for migrant and mobile labour;
- Increased participation of 'marginalised communities across gender, caste, religious, age and class' in the formal workforce;
- Ensuring and facilitating mobility for workers across the country;
- Enforcing minimum wage and lower wage disparities;
- Improving workplace and occupational safety;
- Creating inclusive workspaces and work cultures, with institutionalised anti-discrimination policies and effective redressal processes;
- Increased transparency in hiring processes, particularly in public institutions.

2) *Generation of New Livelihood Trajectories*

- Livelihoods that 'green' the economy following a low-carbon high-employment industrial policy;
- Support for secondary sector and job-intensive enterprises at different scales;
- Growth of non-farm employment in the rural areas;
- Diversifying location of employment centres by region, scale and sector, using both effective regulation as well as employment guarantee and public employment programmes;
- Continuing support to innovative and knowledge-driven high-skill livelihoods, keeping in mind the need for diversification in locations.

3) *Facilitating Entrepreneurship and Enterprise*

- Lowering barriers for the self-employed, micro-enterprise and increasing support for small enterprises, particularly by transforming or eliminating licensing regimes;
- Enterprise facilitation at multiple scales including bureaucratic, institutional and regulatory support;
- Improved credit and insurance availability at all scales to reduce risk;
- Protecting and promoting existing informal enterprise without imposing the costs of formalisation;
- Building linkages between urban, peri-urban and rural markets and consolidation across regional markets to access economies of scale;
- Creating integrated supply chains that aggregate value close to the primary producer/worker;
- Using technology to expand livelihood options and facilitate enterprise by lowering cost, expanding markets and reducing risk through access to information.

Livelihoods: Challenges and Opportunities

It is estimated that India would require an additional 12 million new livelihood opportunities a year for the next three decades to absorb young workers owing to the demographic transition (Planning Commission, 2001, 2007). The challenge however, lies in creating livelihoods for many of these young people outside the large residual pool of surplus underemployed workers in the primary sector, and a stagnating labour demand from the formal manufacturing sector. Apart from the ongoing growth and diversification into services, this could include new forms of high productivity green manufacturing, ecosystems and energy services.

Livelihood and Employment Structure

India's livelihood structure seriously lags its economic output structure with 28 percent of workers employed in the service sector and only 12 percent in manufacturing, which represent 54 and 29 percent on GDP respectively. This is largely due to multiple structural constraints: lower and stagnating agrarian productivity, adverse terms of trade; constrained human capital growth, poor access to credit and technology and informalisation (Sengupta et. al., 2008, Gupta, 2009). More recent analysis seems to suggest that the divergence may be reducing through a mix of seasonal and permanent migration and livelihood diversification (Damodaran, 2008).

Figure 16: Output Employment Mismatch in different Sectors

Source: Sastry, D.V.S. et.al (2003)

Labour force participation rates are also starkly divided by gender, caste and religion. Women form only 32 percent of the labour force (NCEUS, 2005). Similar divisions are prevalent along caste and Muslims. Furthermore, 92 percent of the workforce is employed in the unorganised/informal work (NCEUS, 2005). In the last two decades, the structure of employment has changed significantly – with a sharp increase in what is broadly called 'self-employment' and a decline in casual labour employment for both males and females. The proportion of self-employed is higher in some of the poorer states e.g. Bihar (59 percent), UP (59 percent), Rajasthan (56 percent)(as compared to the national average of 45 percent) indicating that the self-employed tend to be poorer than their salaried counterparts and are limited by their lack of access to credit, markets, and space. The new policy of sealing non-confirming urban residential properties in cities like Delhi has affected them the most (Urban Poverty Report, 2009). Urban casual workers, on the other hand, are caught in a skill-employment mismatch and thus face serious disadvantages in the new economy.

What is a matter of concern is that the rate of growth of employment declined from 2.03 percent between 1983 and1993 to 1.85 percent between 1994 and 2004. There has been a similar decline in the growth rate of wages and average earnings of the workers between 1993-94 and 2004-05 compared to the previous decade (NCEUS 2005).

Unlike China, India's experience with rural industrialisation and non-farm livelihood diversification has been patchy with limited large-scale impact. This, combined with low levels of rural human development, a decentralised settlement structure with relatively low levels of urbanisation even in the mid 21st century, and a limited propensity to migrate, implies that a rather different livelihood structure may need to develop in many parts of India than suggested by conventional growth models. This may be necessary to provide adequate incomes to older, less educated peasants and adequate livelihood opportunities to a younger and better educated rural population in the face of hollowing-out of villages in many regions (Gupta, 2009).

India's challenge has been of large scale hidden unemployment and underemployment. A slow transition from rural agrarian livelihoods to those in the secondary and tertiary sector coupled with the collapse of artisanal production, slow growth of non-farm rural livelihoods and public employment, 'jobless' growth and informalisation in the industrial sector pose serious challenges to rural-urban mobility. If India is to add 12 million new livelihoods opportunities in a year, it would need to facilitate the rapid development informal and self-employed work. Similarly, small and medium sized enterprises will need to play an important role in livelihood and employment generation. Inadequate credit and financial services result in small enterprises being exposed to too much risk. Further, bureaucratic, restrictive and, at times, hopelessly archaic and outdated regulatory regimes and legislations often penalise informal and formal small scale enterprise rather than promoting them.

Quality Employment and Social Security

The Indian labour space is dominated by informal work, which is characterised by job and income insecurity, low productivity and earnings, and no social protection. Even for formal workers, the proportion of temporary and contract workers is growing (NCEUS, 2005), with them earning far lower wages and receiving no benefits or protection compared to regular workers.

While on the one hand there is job insecurity and increasing informal work, on the other there is lack of flexibility in labour hiring and firing within formal work. Existing labour redundancy laws make it difficult to lay off workers if the company has more than 1,000 workers. These policies are under considerable pressure from globalisation, and maybe revisited in the coming decades.

India has had poor experience with instituting and enforcing minimum wages. The current minimum wage is at Rs 100 per day; a wage that is clearly unenforced especially within informal work. There are a few social security schemes for informal workers. The National Commission for Enterprises in Unorganised Sector has identified social security and working conditions as key issues to be focussed on in the coming decades.

The National Rural Employment Guarantee Act (2005), which guarantees 100 days employment in unskilled manual work per household at Rs 100 per day, has been a key source of employment for 44 million rural households since it was instituted. Though it is a step in the right direction, it has been plagued by a host of implementation challenges. The NREGA cannot, however, in the long term, be a substitute for a genuine social safety and security net.

New and Sustainable Livelihoods

Continuously generating sustainable livelihoods for a growing population with increasing levels of education and economic aspirations is probably one of India's most serious challenges. A key source of livelihoods, relevant to both sustainability and the urban transition will be in construction and infrastructure. Through the NREGA, this convergence is already being leveraged in rural areas as the majority of NREGA jobs lie in a forestation, infrastructure and water conservation and watershed development. There will need to be a more concerted effort in creating sustainable construction livelihoods and employment opportunities.

India's spontaneously evolved, services-led development pathway flies in the face of both manufacturing and export-led growth orthodoxies that led the East Asian tigers and China to their current development status. A key question is whether a service-sector led development trajectory for India can be sustainable in terms of servicing domestic demand and livelihood generation or whether a more radical set of options needs to be considered. These could help maintain a relatively large proportion of the working population increasingly urban-like 'rural' areas, but engaged in higher productivity and diversified 'post-industrial' livelihoods that include decentralised network based renewable energy production, bio-fuel and value-added biomass and food production; 'green' manufacturing and ecosystem services management.

Addressing this could mean building close linkages between urban, peri-urban and rural manufacturing; a strong fillip and incentives to the construction and infrastructure sub-sectors; creating new green manufacturing, energy and recycling opportunities, and strengthening the returns from both farm and non-farm primary economic activities including a diversification into value-addition in sustainable animal husbandry and aquaculture, horticulture, floriculture, biofuels and bio-materials and medicinals (Planning Commission, 2002, Revi et.al., 2008). Appropriate regional development strategies would need to be evolved in consonance with these complex and often competing objectives.

Furthermore, an estimated 50 million people (mainly indigenous tribes) depend directly on forests for their livelihood. Their livelihood and forest bio-diversity is being increasingly threatened by commercial timber, fuel-wood, fodder and medicinal plant extraction and severe grazing pressure from livestock (TERI, 2000). Protection of these resources will be the key to both, livelihood enhancement and environmental conservation.

6. Environmentally Sustainable and Inclusive Economic Growth

Environmentally sustainable growth enabling and enabled by increased participation and inclusion at all scales

1) Inclusive Economic Growth

- More equitable allocation of resources generated by growth and increased avenues for all sections of society to partake and benefit from it;
- Equity-centric resource distribution across primary, secondary and tertiary sectors to support a high employment growth strategy;
- Strong state regulation to guide and ensure regional and sectoral diversification with an emphasis on direct investment to un-served areas;
- Investment in key social and resource sectors that grow human and natural capital;
- Investment in improving, sustaining and transforming institutions and public systems.

2) Macroeconomic Management

- Contained inflation to ensure stability and inclusion;
- Better managed revenue collection and fiscal regimes;
- Reduced internal inefficiencies through economic integration.

3) Environmentally Sustainable Growth

- Investment in sectors that generate low-carbon and environmentally sustainable growth;
- Support for environmentally sustainable production systems at all scales: promotion of environmentally sustainable consumption patterns, provision of basic goods and services to the poor with a simultaneous rethinking of non-poor aspirational consumption patterns;
- Creation of environmentally sustainable settlements as centres of growth;
- Global leadership on developing environmentally sustainable development pathways.

4) Facilitation of Enterprise and Innovation

- Systems and cultures that promote innovation at all scales and in multiple sites from universities to workplaces to public institutions;
- Recognising and supporting existing innovations, especially at the local and micro-level;
- Support for enterprise at multiple scales (especially small enterprises) and lower barriers to entry for new enterprises;
- Increased access to fair credit and financial services;
- Increased access to technology and information.

Economic Growth: Challenges and Opportunities

While economic growth is merely a means to various social and economic ends, given the large gaps in employment and poverty in India, it remains a key envisioned outcome in the short to medium run. India's economic growth has historically been highly unequal both at a macro and micro scale. Given India's employment and environmental pressures, a substantial rethink of current growth strategies is needed to enable development to be both more inclusive and environmentally sustainable.

Inclusive Economic Growth

India's economic transition from a primary sector-led subsistence economy in the 1950s to a mix of secondary (29 percent) and tertiary-sector (54 percent) led economy in terms of output has been relatively steady. However, its livelihood structure seriously lags its economic output structure with approximately 60 percent of workers employed in the primary sector. This is largely due to multiple structural constraints: lower and stagnating agrarian productivity, adverse terms of trade; constrained human capital growth, poor access to credit and technology and informalisation (Sengupta et. al., 2008, Gupta, 2009). A slow transition from rural agrarian livelihoods to those in the secondary and tertiary sector, coupled with the collapse of artisanal production, slow growth of non-farm rural livelihoods and public employment, 'jobless' growth and informalisation in the industrial sector pose a serious livelihood-centred challenge to inclusive economic growth.

But livelihoods have never been central to India's macro-economic policy agenda, partially because of the size of the challenge and the relative stability of the notional unemployment rate in India. This could change over the medium-run as greater movement of the workforce from the primary to secondary and tertiary sectors takes place and social and economic unrest in urban areas becomes a salient challenge.

At the macroeconomic level, regional disparities in terms of economic growth and outcomes have widened post reforms in 1991, with industrialised states growing much faster than poorer states (Bhattacharya and Sakthivel, 2004) and differing rates of urbanisation being responsible for much of the divergence (Sachs et al, 2004). This growing inequality will need to be addressed in the coming years, to achieve more balanced and inclusive growth.

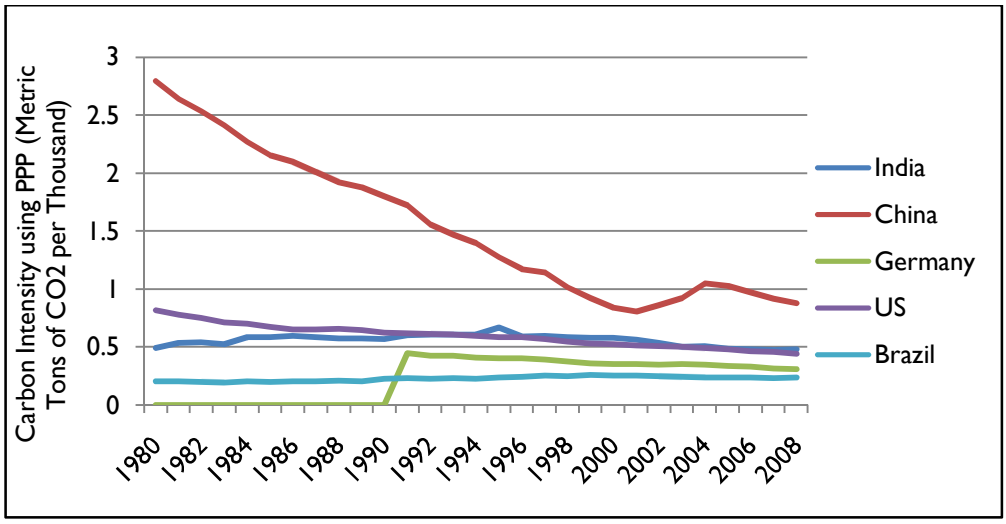
Environmental Sustainability

The Indian economy exceeded its ecological carrying capacity in the mid-1990s (Wackernagel, 2007). The national ecological deficit has been increasing steadily since then (GIST, 2007) putting considerable pressure on improving regulation and compliance and enabling multiple phases of the environmental transition. This is of concern because India's poor and vulnerable are most impacted by constraints to resource access and consequent conflict. Their livelihoods and places of residence are often highly exposed and vulnerable to a wide range of natural hazards and environmental externalities created by a rapidly expanding economy.

With increasing international pressure around Climate Change and some domestic resource challenges, India's goal of 8 percent GDP growth may need to be reconsidered. India's competing environmental and developmental challenges will only be simultaneously addressed via a low carbon/environmentally sustainable growth strategy. India's current per capita carbon emissions stand at 1.6 tonnes, far below the global average of 5 tonnes and the desired the global per capita average of 2 tonnes. India thus still has some room to grow, but still needs to provide basic energy to close to 400 million people. Thus, India's carbon intensity will need to decrease significantly from a current level. Estimates suggest another

25 percent increase in current efficiency is possible. This will pose a tremendous challenge in the coming years and will require reorientation of India's growth and energy policy.

Figure 17: Carbon Intensity using Purchasing Power Parities



Source: EIA (2009)

Macroeconomic Stability and management

Maintaining high savings and investment rates are central to maintaining the momentum of India's growth and the potential creation of a new Asian variant of capitalism. Savings rates at over 30 percent have traditionally been high in India because of long-standing capital constraints, a culture of thrift, the lack of a public social safety net and the comfort of strong social and family networks. These social and economic values are steadily changing, making it unclear if current savings rates can continue.

The Indian economy has been rather well-insulated from international contagion and shocks. India's planners and economic mangers have been criticised for their caution in opening up the Indian economy (Panagariya, 2008). This is seen both as an important factor in the poverty lag between India and China but also a path of moderation vis-a-vis export-led growth and economic openness that may well be a long-term asset (Subramanian, 2009).

Inflation has historically been the single most important measure of effective macro-economic management in India, largely because of a large population of unorganised sector workers who have no hedge against it. India has been rather effective in handling this in the past, but with the opening up of the economy the latitude for intervention has reduced. India has similarly made good progress in reducing the fiscal deficit at central and to a lesser extent state level. The current global economic slowdown and crisis has put much of the Fiscal Responsibility and Budget Management (FRBM) targets well out of range, because of multiple stimulus packages and deficit financing.

A number of measures have been suggested to further reform the financial sector in India, increase credit access and participation in the formal financial system to a much wider set of participants (Rajan et. al, 2009). The health of India's banking sector is relatively good as also its equity markets; even though access and participation in both is limited. The development of bond and mortgage markets, insurance and pension sector reforms are cued for the next round of major economic reforms.

India's banking system is now reaching into the hitherto un-served informal sector. Yet financial accessibility remains a serious challenge for the bulk of the population. A big gap still exists around taking highly asymmetric land markets online, which could also - via disintermediation - slowly push out both political and criminal real estate interests. This would unlock the potential for more rapid and equitable settlement development.

Appropriate forward looking macro-economic, monetary and fiscal policies that act in the wider and longer term interest could be a considerable asset to India's future growth and development.

Enterprise and Innovation

A significant shift from an India of the 1980s has been slow acceptance of the role of enterprise and entrepreneurship in economic development and the building of India's future. The first generation reforms of the early 1990s provided the space for the deregulation of a draconian system of licensing and control. This provided considerable institutional space for both domestic and international enterprises to take on the challenge of meeting domestic and export demand. While there were many short-term failures on the way, it has led to an improvement in the overall economic and regulatory environment even though well below competitive national standards in ASEAN and East Asian countries (Nilekani, 2008). Furthermore, support for enterprise development at the small and medium scale has been unequal and faltering and plagued with high barriers to entry. This is further discussed in previous section on livelihoods.

7. Improved and Equitable Land Use, Access and Shelter

Democratic, Accountable, and Equitable Land Allocation and Acquisition with Appropriate, Affordable and Accessible Housing

1) Sustainable, Democratic and Equitable Land Allocation

- Better integration of land allocation decisions with regional governance on the principles of sustainable, inclusive and equitable development, particularly with regard to rates and geographies of rapid urbanisation;
- Greater equity in land holdings, especially for small farmers; increasing access to land holdings for the rural landless; and discouragement of consolidation and ownership of large land holdings in a few hands;
- Balancing large scale land consolidation for private, market or industrial use with regional human, economic and social development priorities;
- Transparent, effective and binding environmental impact assessments and integration of sustainability and resource management concerns into land allocation decisions.

2) Transparent and Accountable Land Acquisition and Allocation Procedures

- Critical reform of land tenure, regulatory and revenue systems;
- Creating Land Management systems with reliable and up-to-date information of ownership and existing use;
- Clear, equitable, inclusive and just criteria for resettlement and compensation in case of displacement;
- Effective, speedy and diverse dispute resolution mechanisms.

3) Appropriate, Affordable and Accessible Housing

- Recognition of the Right to Housing as a fundamental and justiciable right, and the development of appropriate legal, regulatory and policy frameworks;
- Integration of housing and land use decisions into more equitable and transparent planning processes at the urban and regional level;
- Prioritising investment targeted to reduce existing housing shortfalls in cities, especially for the poor and the lower end of the market. Involving diverse actors in building housing stock at all levels using strict regulation and incentives and recognising and supporting auto-construction by the poor;
- Expanded security of tenure independent of property ownership, especially for the poor;
- Expanding shelter and protection for the homeless and transient populations;
- Improvements in housing design, construction and technologies to enable appropriate, sustainable and affordable construction and material use;
- Expanding access to reliable and affordable housing finance using an innovative range of products and plans.

Land Use, Access and Shelter: Constraints and Opportunities

Land and the Urban Transition

India, like much of South Asia, lags the rest of the world in its rate of urbanisation, in spite of its current lower middle income country status (Growth Commission, 2009). Over two-third of its population still lives in villages. The building agrarian crisis in rural India coupled with the potential impact of climate change, the pull of urban economic growth and livelihood and educational opportunities could well accelerate urbanisation in the next two decades. India is ill-prepared for these challenges and, in particular, the questions it raises for land and shelter.

For peri-urban agricultural land, the continuous and relentless expansion of India's mega urban-regions have seen uncontrolled conversion of agricultural land into urban land, often with unmeasured impacts on work and livelihoods for the landless in these areas let alone the impact on food production (Planning Commission, 2007). India's land sources are under considerable stress especially soil in irrigated, intensely cropped areas.

Conservation of soil and water resources, altering agricultural practice policy and irrational subsidies will be crucial in adapting to a changing climate. Even though there has been some stability of India's overall forest cover, addressing the conservation and community-based management of forests will not only help conserve resources but provide interim livelihoods and support to a large fraction of the indigenous forest-dwelling communities that live within them. Managing this ecological balance, however, depends strongly on protecting land from pressures of alternative use like SEZs and urbanisation.

Within urban regions, over-centralisation in large cities and metropolitan centres, the abysmal condition of large proportions of the poor and vulnerable are often directly linked to the difficulty of land assembly and infrastructure provision. New urbanisationurbanisation models that have seen the consolidation of large urban and peri-urban land holdings by developers into gated townships and the splintering of infrastructure provision have created even sharper spatial segregations in Indian cities, as affordable access to proximal land becomes increasingly difficult for most.

Equity in Land Holdings

Failed or incomplete land reforms and land ceiling acts in most of the country have left India with a highly skewed land ownership pattern, especially in rural areas. Current models of development that have encourage mega-projects and land consolidation into Special Economic Zones (SEZs) are exacerbating this already skewed access to land. This consolidation has often been met with fierce resistance from the displaced, leading to political and social contestations of a serious nature that could potentially threaten political stability from state to national levels. There is a critical need to align land allocation decisions with the goals of democratic and accountable governance based on a principle of sustainable and inclusive growth and development. In addition, procedures and practices of decision-making for land allocation and use must be made participatory, democratic and transparent so that regional goals for social, human and economic development can be balanced and ecological concerns adequately addressed.

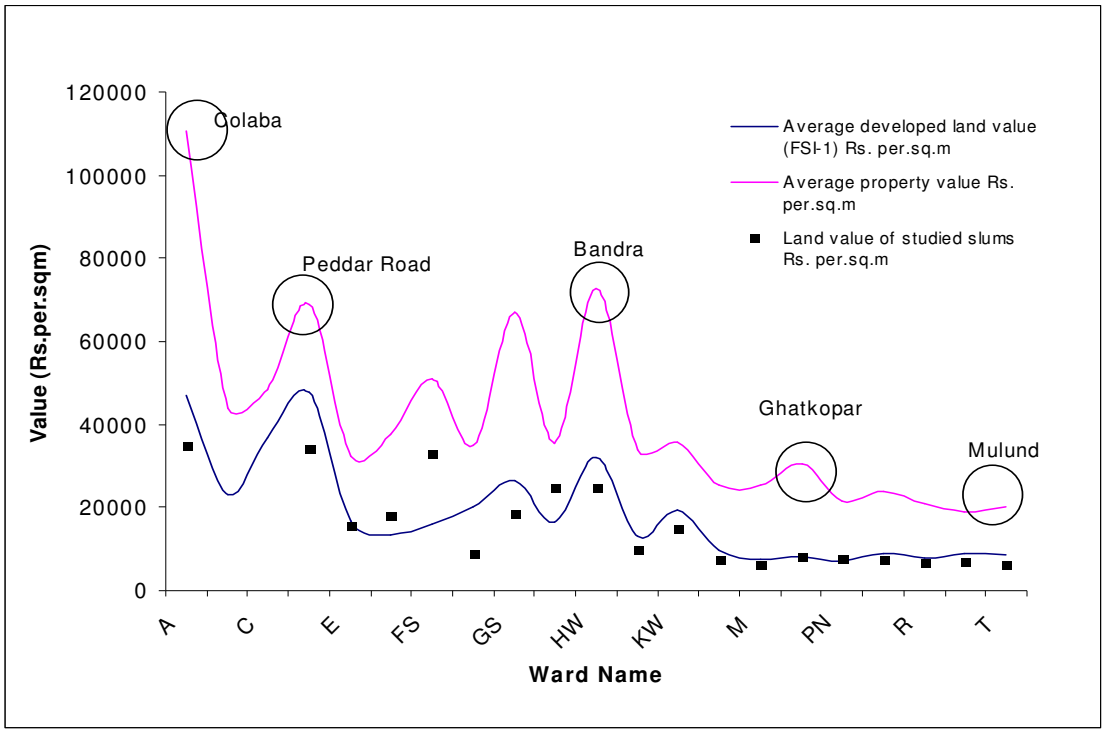
Systems of Land Management

Reforms are critically needed in information and management systems for land to consolidate data on holdings, revenues and titles. Ownership, occupation, use, and titling remain deeply contested often even for publicly held land and the lack of clear information has widespread consequences ranging from revenue generation and multiple claims to ownership to the difficulty in acquisition and consolidation and the misrecognition of claims to residence and tenure. This opaqueness of information makes large-scale corruption in allocation and acquisition both inevitable and difficult to trace.

Right to Housing and Security of Tenure

A significant majority of Indians live in insecure and vulnerable housing. Widespread slums are inextricably associated with Indian urbanisation and the lesser-seen pressure and vulnerability of many rural habitations is equally a cause of concern. Millions of citizens live in forced illegality often with little or no provision of infrastructure and basic services. In addition, as land markets have been slowly deregulated, access to and availability of affordable land for housing has increasingly worsened. Evictions and displacement have become common phenomena across the urban-rural spectrum, increasingly without even the right of adequate compensation and resettlement.

Figure 18: Average developed land and property value by ward (2005)



Source: Mehta and Revi (2009)

Despite these crisis-like conditions, housing and shelter have so far failed to be recognised as fundamental rights in the Indian constitution and enjoy a mixed legacy in case law in the highest courts of the land. Even grossly inadequate commitments to publicly built housing for the poor have gone unmet and the overall shortfall in housing units is disproportionately concentrated in housing for the poor. New political, policy level, planning and regulatory frameworks need to be developed based on a right to housing. Until then, massive public investment and innovative regulation and incentive structures that draw in and commit both

state and non-state actors at all scales in building housing stock is critically needed to address existing shortfalls.

Simultaneously, security of tenure and the recognition of the existing self-building by the poor need to be made non-negotiable starting points for housing policy. Tenure security need not be linked to property titling and direct ownership, and experiments with collective titling, land banking, sale restrictions and expanding secure rental markets must be explored. Fundamental changes are needed in both the perspective and practice of urban planning in order to reach these goals. Provision of infrastructure and basic services to settlements must, in particular, precede settlement or be provided to existing settlements regardless of tenure status.

It is also critical that these needed expansions in housing stock reflect a new approach to design, construction technologies, and materials. Existing housing stock is very poorly managed and serviced in India often due to counter-productive legal and regulatory incentive structures, but also due to corruption as well as limited attention given to construction technologies, materials and environmental concerns. New technologies, the emergence of green design and building techniques and the use of traditional and local materials need to be mainstreamed into building and construction practices for both new and existing housing stock.

8. Accountable and Effective Public Systems and Institutions

Democratised, decentralised, capacitated and effectively operated and managed public systems/institutions.

1) *Democratising Governance*
   - Establishing democratic and transparent appointment procedures to urban and rural local government, public bodies like the utilities and the police force, as well as the bureaucracy;
   - Expanding and protecting right and access to information to ensure accountability and transparency;
   - Institutionalising and expanding e-governance;
   - Increasing citizen and non-governmental participation and oversight at all scales;
   - Increasing accessibility and responsiveness through multiple interfaces to all citizens.

2) *Building and Retaining the Right Capacity*
   - Changing institutional cultures and initiating a range of programmes to attract young and innovative talent into public systems;
   - Changing compensation, assessment and institutional cultures to retain and attract talent within public systems;
   - Ensuring that the diversity of community, identity, region, language, ability and gender are represented.

3) *Reforming the Civil Services*
   - Enhancing productivity by rationalising the mission and organisational goals;
   - Professionalisation of the higher bureaucracy and civil services to retain talent and enable lateral entry at middle and senior levels;
   - Implementation of recommendations of successive administrative reform committees for human resource management, institutional streamlining and restructuring, incentive structures, performance-based management, and changes in retention and dismissal practices;
   - Implementing a vigorously planned anti-corruption agenda.

4) *Effective Decentralisation*
   - Enabling fiscal decentralisation and empowerment of the urban and rural local government;
   - Strengthening identity and ownership of the local tier of government among public servants and citizens alike, particularly among the marginalised;
   - Strengthening capacity within and across these bodies to play a more proactive and responsive role in local government and in interfacing with state and national levels.

5) *Improving Everyday Management and Operations*
   - Tackling and reversing perception and reality of mismanagement, inefficiency and corruption in public systems;
   - Restructuring current institutional and incentive structures as well as management procedures to encourage efficiency and performance;
   - Administrative reforms to enable greater accountability, transparency and responsibility of public servants and government;
   - Improved financial planning, public expenditure management and fiduciary risk management.

Public Systems and Institutions: Challenges and Opportunities

Public institutions that represent the exercise of state power ranging from bureaucracies, utilities and regulatory authorities to police and judicial systems, as well as the emerging forms of local government, are central to the contemporary developmental, social and political challenges facing India. The efficacy, accountability, and robustness of these institutions are critical foundations on which the country's democratic structure, its political settlement as well as its social and human development are premised and sustained.

The Need for Transformation

India's public institutions have had a mixed record. Widespread perception of and actual operational inefficiency; a complex and procedurally hobbled bureaucracy; insufficient capacity as well as endemic and rooted corruption at all scales have blemished the reputation of Indian public institutions and eroded them almost beyond repair in many regions of the country.

Local public systems that need to perform – such as food distribution, utilities and the police – have disproportionately struggled particularly in urban areas. Macro public institutions, especially those mandated to protect India's democratic structure like the judiciary and the Election Commission, have succeeded far better and have been remarkable for their robustness and commitment to democratic practice despite severe challenges of resource constraints and overwhelming diversity. Recent organised violence against the state remains an emergent and critical concern.

Strategic Implementation of Institutional Reforms

The benefits of an active and vibrant democracy in India are largely lost in translation to tangible development outcomes, in spite of an apparently interventionist and modern state, because of the poor state of governance, dismal institutional capacity and the lack of consensus on difficult reform interventions (Kapur & Mehta, 2005). A few interventions, for which a perfectly good set of recommendations by empowered agencies are already in place yet not implemented: public services reform, criminal justice system land tenure, revenue and regulatory system reform; professionalisation of the higher bureaucracy to retain talent and improved financial planning to reduce risk.

Governance will be most immediately impacted with a much-needed and targeted set of reforms for the Civil Services. Numerous recommendations have called for a range of reforms: institutional restructuring; ease in hiring and firing; rationalising of missions and organisational goals; clearer and better structured incentives; new institutional partnerships including public and private collaborations; merit-based recruitment; increased citizen participation and oversight; technological upgradation and introduction of e-governance, among others.

The immediate challenge, therefore, is to trigger the strategic political and institutional mobilisation needed to implement known solutions and then to formulate new plans of action.

E-Governance

A growing arena with the potential to be the catalyst for much-needed change is the emergence of e-governance. The use of informational and communication technologies (ICTs) in governance goes beyond the introduction of technology into the function of public services and systems. It has the capacity to improve governance, accountability, efficiency as

well as create new networks between citizens and the government and within government agencies, leading to new processes of functioning. E-governance has the capacity to dramatically increase access to governance across region, scale and language at relatively lower cost, particularly in terms of access to information and services.

The government has already identified multiple governance areas where ICTs are to be introduced, ranging from public grievances, rural services, policing, social services, telemedicine, land management tax and other billing or payment needs and public information dissemination, among others (Kaushik, 2004). With the advent of the Universal Identification, ICTs will further gain importance within a changing governance system and could, if properly harnessed and implemented alongside other administrative and institutional reforms, be a part of transforming governance in India.

Effective Decentralisation

One welcome trend has been the slow but steady turning way from the political and economic centralisation that marked earlier decades. The push for political decentralisation came with the emergence of strong regional politics in India since the late 1980s and an ambitious process of decentralisation via the 73rd (rural), and 74th (urban) Constitutional amendments. The amendments which sought to empower and strengthen local governmental institutions in rural and urban areas have had mixed results, especially in urban areas where implementation has been varied and lacklustre.

Effective decentralisation can shorten the accountability loop, particularly at the local level, and empower communities to hold governance and service delivery accountable. Yet decentralisation as a process is also prone and open to capture, and could result in fragmented and unequal service delivery being worsened as the more powerful manage to siphon resources their way. Concerns about equitable and accountable governance, especially in societies with high levels of inequality and social stratification like India remain fundamental questions even post decentralisation and devolution of power.

Organisational and Institutional Cultures

The focus of multiple interventions to improve India's public institutions has been greater external and autonomous oversight to ensure accountability. While there is no denying the importance of such external pressure, questions of institutional design and internal incentive structures often been overlooked in India (Mehta and Kapur, 2005).

Questions of institutional design are complex in the Indian context. Broader interventions that seek to impact the organisational culture within public institutions will need to recognise the interconnectedness amongst these institutions, successfully functioning institutions are often overburdened because of the failure of other, and individually performing institutions are often hampered and fail because interconnected institutions fail to deliver. In addition, institutional conflict, resource overlap, and turf wars are significant impediments to performance and difficult to resolve due to the incredibly dense procedural and bureaucratic nature of many Indian institutions, in addition to the politics of implementing change.

Corruption

A central issue that brings together questions of accountability, social inequality in accessing public institutions, effectiveness, institutional design and performance, is tackling the endemic corruption [both in its reality and its perceptions] of public institutions. No silver bullet exists to combat corruption, and responses must come from both within institutions as well

as by transformations in society as a whole. The need to have a focused and clear emphasis on reducing corruption within institutions must be seen as a starting point for any institutional transformation in India. It is, in a way, the question without which a long term transformational agenda can perhaps not even begin.

9. Physical Infrastructure and Services

Sustainable, Efficient and Distributed Infrastructure combined with Accessible and Equitable Services at all levels.

1) Extending Infrastructure Networks

- Extending infrastructure networks to cover the entire country, and not merely intensifying infrastructure along certain corridors;
- Expanding the rail network to increase the percentage share of railways in both freight and passenger traffic;
- Expanding the network of national and state highways, as well as local access roads to villages;
- Increasing the number of ports, especially container ports;
- Increasing India's power generation capacity, and expanding the grid to connect all feasible settlements;
- Expanding the IT and telecom network to cover the country, particularly the peripheries and significantly increasing teledensity;
- Expanding the irrigation network and increasing water efficiencies;

2) Increased and Improved Accessibility

- Increasing accessibility of basic services (water, sanitation, cooking fuel) to the poor;
- Increase accessibility to infrastructure networks in remote areas;
- Provide efficient customer service, and better quality of services: reliable and timely rail transport, all season access roads to villages, clean drinking water, connectivity for telecom and high bandwidth for IT.

3) Sustainable and Resilient Infrastructure

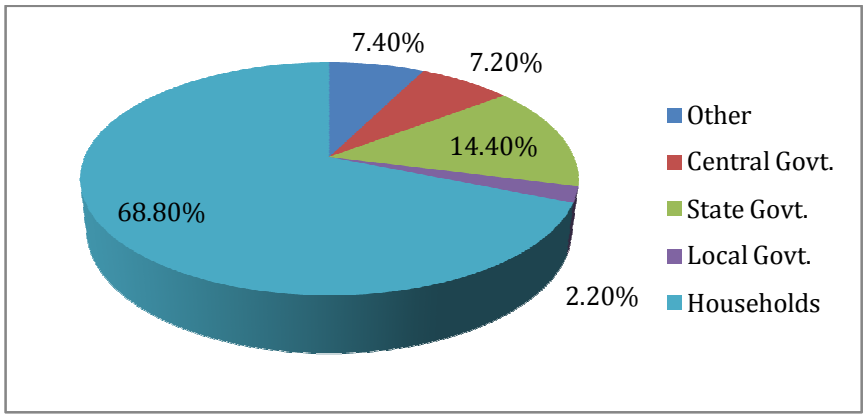
- Increasing efficiency of infrastructure networks by minimizing technical and commercial losses;
- Integrating environmental services in cities to ensure efficient use of water, reduce waste and deliver environmental health outcomes;
- Increasing the life of infrastructure, and ensuring better services via effective operations and maintenance;
- Improve governance for infrastructure creation and service delivery;
- Upgradation and addition of new climate and risk resilient infrastructure.

Infrastructure: Challenges and Opportunities

Expanding the Transport Network

While there has been substantial investment in expanding and developing India's road network in the past decade, much of the investment has been concentrated in corridors, mostly through the National Highways Development Project. Some upgradation and extension of the national rail network is also taking place, especially around freight corridors. It is also expected that there will be substantial investment in urban public transport in the major cities in India through the JNNURM in the coming years. It is imperative that this investment goes largely into reducing bottlenecks between major economic hubs and connecting them to underserved and un-served peripheries.

Figure 19: Sources of Finance in the Health Sector in India during 2001-02



Source: Financing and Delivery of Health Care Services in India, Sec IV, K. Sujatha Rao, K. Selvaraju, Somil Nagpal, S. Sakthivel

At the local scale, substantial progress has been made in the provision of access roads to villages, even though many of them are of poor quality, and get washed away in monsoons. Good quality access roads are essential for free movement of people and goods to and from towns and are therefore an important priority. Connectivity to villages increases incomes by providing market access and opportunities for employment. The cost of transportation of goods is also partly determined by the quality of roads. In 2000, India had connectivity to almost all villages with populations of over 1,500, 86 percent with 1,000 to 1,500 inhabitants, and 43 percent of villages with less than 1,000 population (IDFC, 2007). However, the quality of these roads is often poor, and many do not have adequate culverts and cross drainage, making them difficult to use through the year. As the responsibilities for village roads lies with multiple institutions, roads are built under various schemes, inadequately planned or constructed, and therefore underperform or are missing when they are needed most.

In the medium to long term, India should increase total share of railways in both freight and passenger movement to reduce environmental externalities. Due to the demographic dividend in the coming years, there is likely to be a quadrupling of demand for both passenger and freight traffic (IDFC, 2007). Between 2001-05, the railways made a bid to win back freight traffic lost to road, and the freight traffic increased from 310 billion tonnes to 460 tonnes. To ensure movement of people, it is essential the railways connect to the peripheries of the country including Jammu and Kashmir and the North East. The Indian Railways have made a huge leap in the last decade through various system upgrades such as online and telephone booking systems. Improvements in the punctuality of trains, quality and

accessibility of stations within the cities are areas that still need improvement. Improved service and reliable connectivity are likely to increase the share of freight traffic and thus also decreasing total energy expended in transport.

Over the past few decades, India's exports and imports and thus the total movements of goods have grown: global trade through India's ports crossed 500 million tonnes in 2004-05. Since 95 percent of total exports move through already congested ports there is a need to develop new ones in response to a growing economy. The Union Government plans to increase capacity of both major and non major ports by 1500 million tonnes per annum from the current 750 by 2012 (IDFC, 2008). Shipping could improve through simplification of procedures, increased dwell time and more container ports. Containerised cargo, a subset of sea-borne trade, is increasing at a faster rate than total trade. Hence major ports are already investing Rs 10,600 crores in container terminals.

Provision of Environmental Services

India has made steady progress in fulfilling the MDGs with regard to drinking water and sanitation. However, India should ensure clean drinking water to all by 2015, and aims to increase the sanitation coverage to 100 percent in urban areas. While some progress has been made in providing clean water in rural areas, sanitation coverage, despite multiple public programmes, is at 22 percent. In urban areas, the coverage both for drinking water supply and sanitation is 91 per cent and 65 per cent respectively, however service provisions in the low income settlements is particularly low. Currently, 17 percent of households in notified slums, and 51 percent in non-notified slums do not have access to latrines (MHUPA and UNDP, 2009).

There are currently huge sets of challenges around the provision of environmental services in urban areas. Water supply suffers from huge losses due to leaks, and cities are going further afar to draw water from the hinterland. Sewerage systems are inadequate in almost all Indian cities, and despite the capital intensity of conventional sewerage systems, cities continue to opt for them, rather than other cost-effective options. Solid waste collection is prevalent only in major cities and waste segregation happens rarely. Most cities do not have adequate storm water drainage, and as cities get increasingly paved, run–off increases and results in flooding during the monsoons. These problems are exacerbated by the lack of coordination between the different institutions that are responsible for planning each of these services. Integrated urban service planning should be carried out to avoid this.

Irrigation is crucial to Indian food security as 35 percent of the land under irrigation is responsible for 60 percent of food production. 60 percent of irrigated land is serviced by ground water through wells and tube wells. Although groundwater offers local flexibility, its use is mired in multiple challenges. Linked water and electricity subsidies, have led to irrational and excessive water extraction in many parts of the country as there no systematic and enforceable policies in place to regulate groundwater use. This also leads to inequity as large farmers can afford to dig tube wells, often leaving farmers with dug wells without water. Traditional systems of irrigation like tank irrigation in the Southern states are being used less and less, in spite of efforts to renew them.

Telecommunications

Though the growth of the telecom industry has been phenomenal in the last decade (increase in tele-density from 1.94 in 1998 to 12 in 2006), the growth has been differential; while the urban tele-density is 35, the rural tele-density is around 2 percent (MHUPA and UNDP, 2009).While there has been some penetration of mobile phones in rural India,

competition is lower than in urban areas and public sector monopolies still exist. As the demand from rural areas grows, more operators will enter the market. Problems associated with expansion into the rural areas are issues of coverage, choice of technology, and the high cost of setting up signal towers. The penetration of the Internet has been negligible in rural areas, as the private and public infrastructure investment required is substantial. With the second wave of sector reforms, 3 G and high bandwidth Internet services are set to enter the market in 2010 altering connectivity as more users would be able access the Internet via their phones.

Figure 20: Infrastructure – Deficits and Eleventh Plan Physical Targets

Sector	Deficit	Eleventh Plan Targets
Roads/ Highways	65590 km of NH comprising only 2% of the network carries 40% of traffic; 12% 4-laned; 50% 2-laned; and 38% single-laned	6-lane 6500 km in GQ; 4-lane 6736 km NS-EW; 4-lane 20000 km; 2-lane 20000 km; 1000 km Expressway
Ports	Inadequate berths and rail/road connectivity	New Capacity; 485 m MT in major ports 345 m MT in minor ports
Airports	Inadequate runways, aircraft handling capacity, parking space and terminal buildings	Modernize 4 metro and 35 non-metro airports; 3 greenfield in NER; 7 other greenfield airports
Railways	Old Technology; saturated routes; slow speeds (freight 22 kmph; passengers 50 kmph); low payload to fare ratio (2.5)	8132 km new rail; 7148 km gauge conversion; modernise 22 stations, dedicated freight corridors
Power	13.8% peaking deficit; 9.6% energy shortage; 40% transmission and distribution losses; absence of competition	Add 78577 MW; access to all rural households
Irrigation	1123 BCM utilisable water resources; yet near crisis in per capita availability and storage; only 43% of net sown area irrigated	Develop 16 mha major and minor works; 10.25 mha CAD; 2.18 mha flood control
Telecom/IT	Only 18% of market accessed; obsolete hardware; acute human resources' shortage	Reach 600 m subscribers- 200 m in rural areas; 20 m broadband; 40 m Internet

Source: Planning Commission (2007)

Governance and Management

Maintenance of infrastructure remains a chronic problem across all sectors. While a huge amount of capital expenditure is pumped into the system, little is available for their operation and maintenance. As a result, the infrastructure often falls in disrepair, and sometimes disuse. The sector faces continuing challenges of inadequate resources to pay for operations and maintenance, and for replacement and efficient technology.

Governance lies at the heart of the infrastructure planning, building and maintenance challenges. In urban areas, services delivery is controlled by multiple institutions: a mix of urban local bodies, parastatal and state bodies working in the same area. Uniform top-down approaches that are instituted without local involvement have often led to development of inappropriate solutions (MHUPA and UNDP, 2007). Furthermore, the devolution of resources, mandates and institutional capacity varies across the country. Hence many local bodies often do not have decision making powers and are thus unable to bring about change.

10. Energy Security and Services

Increasing energy security through improved access, efficiency measures, innovative systems and expansion into renewables.

1) Energy Availability and Security

- Increasing India's electricity generation capacity from 1,60GW to 8,00GW (Planning Commission, 2006);
- Increasing relative and absolute share of renewables in energy mix, lowering reliance on energy imports;
- Substantially improving electricity infrastructure and distribution – lowering transmission losses, increasing efficiency and improving management of electricity utilities;
- Clean and affordable cooking fuel availability for rural and urban poor i.e. provide LPG to all within 10 years;
- Seamless transactions between fuels and electricity, establishing a national gas network.

2) Improved Affordability and Access

- Access to reasonable quality and appropriately priced electricity supply for all;
- Increasing financing and improving subsidy design for renewables; addressing perverse incentives which subsidise 'dirtiest' energy sources;
- De-regulation of fuel price with cushions for the poor.

3) Increase Energy Efficiency across Sectors (in Production and Consumption)

- Increasing efficiency of new and existing coal plants to global best practice standards;
- Increasing energy efficiency of new and existing building construction and urban development;
- Reducing consumption energy by middle and upper classes (in relation to lifestyle and aspirations);

4) Facilitate Innovation

- Innovation on smart-grids for electricity distribution;
- Technology transfer through Climate Change agreements;
- Increasing support for entrepreneurs to scale energy ventures and innovation;

Energy: Challenges and Opportunities

India's energy transition is highly differentiated and geographically diverse. It encompasses a simultaneous shift from traditional biofuels to conventional fossil fuels like coal and oil along with a transition to energy sources like gas and renewables like wind and solar power (Planning Commission, 2005). These transitions are taking place simultaneously across the Indian landscape differentiated by location, economic sector, scale, level of modernisation and engagement with the global economy. They often mirror the state of the real economy i.e. mix of traditional, modern and post-industrial sectors and those most influenced by globalisation. With Climate Change becoming an increasing pressing concern (and India's pledge to its carbon intensity of growth low), India's high reliance on domestic coal and energy imports, the energy transition is likely to be complex.

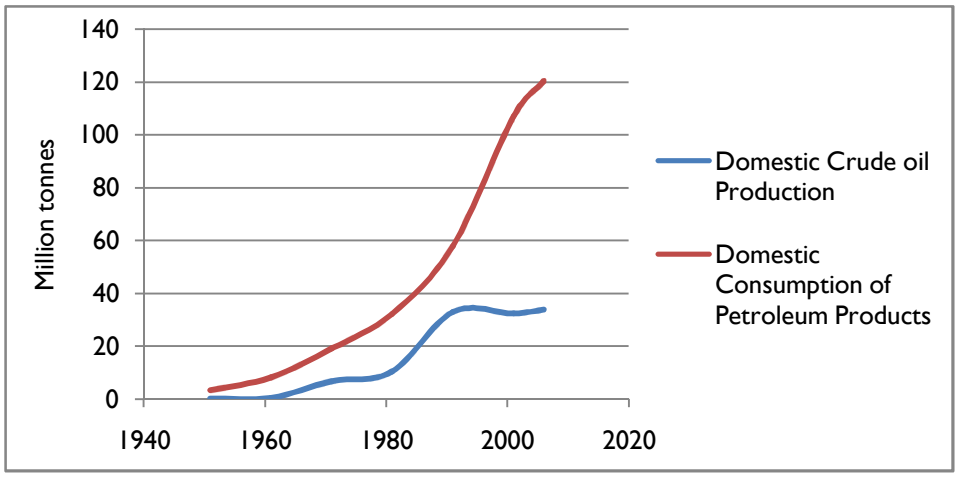
Energy Availability and Security

In order to deliver India's desired economic growth rate of 8 percent over the next two decades, India needs to increase its primary energy supply by 3 to 4 times and its electricity generation capacity by 5 to 6 times of its 2004 levels (Planning Commission, 2006). To achieve this, India is going to require a strategy that pursues all fuel options and forms of energy, technologies that maximise energy efficiency, and demand side management. India's energy security is likely to remain a great concern. With growing demand, India's share of incremental world supply of fossil fuels would be between 13 to 21 per cent by 2030 depending on how effectively energy efficiency measures are implemented (Planning Commission, 2006).

India's most important energy sources and carriers are coal and oil. Coal underpins much of industrial production and a large fraction of power generation. India's key energy constraint is that the bulk of its oil and gas is imported. A dramatic rise in fossil fuel prices and new resources being largely located in difficult or conflict ridden locations has provided a strong incentive to India for developing its abundant domestic coal-based power leading to a wide range of environmental and displacement-related conflict (CSD, 2008). Since the environmental and social costs of coal extraction and the global impact of carbon emissions are significant, there is considerable strategic and commercial interest to develop, incentivise and deploy energy efficiency, low carbon and renewable energy technology as quickly as possible (Leadbeater & Wilsdon, 2007). Regardless, India's dependence on coal is unlikely to wane in the next twenty years.

Oil and gas provide critical chemical feed stocks and support the bulk of India's growing transportation metabolism that has developed in response to domestic demand and export growth. Domestic oil production has remained constant over the last decade but oil imports have been steadily rising. Only 20 percent of India's natural gas needs are met through domestic production, thus pipelines from other countries are being planned and pursued.

Figure 21: Domestic Consumption and Production of Crude Oil



Source: Planning Commission (2006)

In spite of the recent hype, nuclear power can be expected to play only a minor role in India's energy security, even if waste and hazard issues are discounted. India's prospective thorium power cycle is still a generation away from being commercialised (DAE, 2006).

Even with a 40-fold increase in their contribution to primary energy, renewables will only account for 5-6 per cent of India's energy mix by 2030 (Planning Commission, 2006). India's recent National Solar Mission aims to bring down the cost of solar to coal-based grid-parity by 2030 and install capacity of 20,000 MW by 2022 (JNSM, 2010).

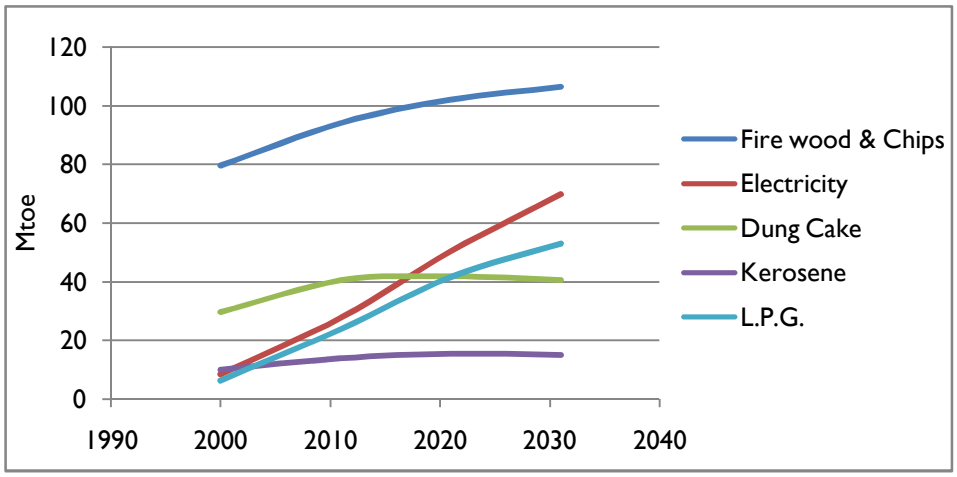
Access and Affordability

The Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) was launched to achieve electrification of all households by 2010 but is unlikely to achieve that target and approximately 400 million people still do not have access to the grid. A large number of areas with access have poor quality power with faltering electricity supply.

Furthermore, India is faced with the dual challenge of providing universal access to basic energy services for domestic and livelihood needs and an environmental challenge of containing its emissions. The effects are likely to play out through significant shifts in energy and electricity prices. India has some of the highest energy prices in the world and reducing the cost of power would both increase affordability of power as well as increase the competitiveness of the Indian economy. However, price decrease goes against conservation efforts/ demand management and India will have to negotiate this terrain carefully.

Household energy problems are not restricted to electricity alone. A traditional biomass-based subsistence energy economy still persists in many rural areas (primarily for cooking) and also among the poor in cities. But traditional biomass has been linked with deforestation, and black carbon pollution. Furthermore the time spent by women in the collection of fuelwood and the health impacts of indoor pollution from unclean cooking fuel have far reaching consequences for poor women across India. Improved cookstoves are only an interim solution, and LPG access will need to be universalised in the coming decades.

Figure 22: Demand Scenarios of Various Energy Items for Household Consumption



Source: Planning Commission (2006)

Increasing Efficiency

India's low and falling energy intensity of GDP growth is encouraging. Currently, India consumes 0.16 kg of oil equivalent (kgoe) per PPP dollar of GDP (compared to 0.23 China and world average of 0.21) and it is estimated that it is possible to lower energy intensity a further 25 per cent (Planning Commission, 2006). This would amount to massive energy savings for the country.

India's electricity systems are in urgent need of efficiency measures. Poor utility management and large transmission losses have plagued Indian electricity systems. Furthermore, India has some of the least efficient coal plants in the world (37 per cent efficiency FIND STAT). The next 20 years should see marked improvements in efficiency measures as climate pressures and energy security concerns take hold.

A concerted effort is required to push for efficiency measures in construction and agriculture. India's urban transition will result in the construction of a large number of new buildings. These provide an immense opportunity for efficiency measures. Furthermore, electricity subsidies for agricultural water pumping will need to be reconsidered/ redesigned, to save both water and electricity, as a 61 per cent of India's energy is currently consumed by agriculture.

Innovation on smart grids will be key to demand and supply side management. The development of smart grids will be required to both increase efficiency and manage India's energy resources. While such smart grids are only just being experimented with, there is considerable hope that they could be implemented in sizeable parts of India by 2030.

11. Conservation of Biodiversity and the Biosphere

Conservation of ecosystems and biodiversity through management of local development needs, awareness raising, knowledge generation, and responding to climate change.

1) Conservation/Protection of Eco-Systems

- Improving protection of biosphere resources, conservation areas and ecological hot-spots;
- Appropriate afforestation measures that promote biodiversity;
- Strong protection of India's core forests;
- Improved management of marine ecosystems, addressing the terrestrial bias of Indian conservation;
- Limiting of river pollution through waste treatment and awareness creation;
- Integrating urban development with ecological conservation, for e.g. mangrove and wetland conservation.

2) Balancing biodiversity conservation and social and economic development

- Addressing concerns of local communities in forest conservation policies;
- Strict environmental evaluation of special economic zones and large scale industrial and development projects;
- Enabling wildlife and eco-tourism in a regulated manner to provide livelihoods for local communities;
- Reducing human-animal conflict in and around conservation areas.

3) Facilitating high quality research and promoting awareness of human dependence on biodiversity

- Management of invasive species;
- Balancing advances in biotechnology with potential biodiversity losses and risks;
- Creating a national biodiversity register and database.

4) Responding to Climate Change

- Managing climate change threats to ecosystems;
- Widening climate change adaptation agendas beyond carbon and mitigation to other biogeochemical cycles and adaptation;
- Increasing forest cover to increase carbon sinks, soil conservation, biodiversity and ground water recharge.

5) *Facilitating policy interventions*

- Strengthening Environmental Impact Assessment (EIA) processes by necessitating independent professionals to evaluate projects;
- Adequate regulatory frameworks for guiding the adoption and implementation of biotechnology research;
- Appropriate policies for transitioning to a natural resource inclusive accounting system.

Conservation of Biodiversity[2] and the Biosphere: Challenges and Opportunities

With its high level of species richness and numerous endemic species, India is part of the group of seventeen Like Minded Megadiverse Countries (LMMC) which together account for 60-70% of biodiversity on earth. Although India is only 2.4% of the world land area, it is host to about 8% of the world's biodiversity *(*National Biodiversity Authority, 2010). India is one of the 12 mega gene centres of the world and two of the 31 global biodiversity hotspots (the North-eastern Himalayas and the Western Ghats) occur within its boundaries. This biodiversity is currently under threat due to habitat loss, fragmentation and degradation due to agricultural activities; resource extraction and developmental pressures on land. Given the mounting pressures of climate change, wildlife losses and declining ecosystem health, India has to seriously focus its attention on biosphere and biodiversity conservation.

Conservation of the Biosphere

According to the Wildlife Institute of India, as of 2005, 20.29% of the country is considered to be forested but only about 9.7% of this falls under the categories of National Parks, Wildlife Sanctuaries, Conservation Reserves or Protected Areas. Official records claim that India's forest cover has been increasing but the quality and health of the forests remain questionable.

Table 3: Protected Areas in India

Current Protected Area Status:	**Number**	**% of General Area**
National Parks	99	1.19%
Wildlife Sanctuaries	523	3.60%
Conservation Reserves	43	0.04%
Community Reserves	3	0%
Protected Areas	668	4.83%
Total	**1336**	**9.66%**

Source: MoEF (2009)

India's environmental policy has focussed heavily on terrestrial ecosystems and inufficiently on marine and aquatic systems though there have been some largely unsuccessful attempts to clean up politically important rivers such as the Ganga and Yamuna. According to the Ministry of Water Resources, 70% of India's surface water resources are contaminated with organic and inorganic pollutants. In 1995, the Central Pollution Control Board identified severely polluted stretches on 18 major rivers in India, a majority of which are around large urban areas (MoEF, 2009). Human resource mismatches and lack of understanding of non-terrestrial ecosystems have compromised marine and aquatic ecosystem management in large parts of the country. Mangrove forests, which are one of the most productive and biodiverse wetlands on earth, cover 0.14% of India's geographic area and accounts for about 5% of the worlds mangrove vegetation. Gujarat is the only state which has managed to increase its overall mangrove cover (MoEF, 2009). Marine ecosystems, particularly coral reefs, are extremely vulnerable to pollution and environmental stress which will only be exacerbated by climate change. The productivity and health of these systems are crucial to the survival of fisheries and other coastal services.

[2] Biodiversity broadly refers to three categories of diversity ranging from genetic diversity within a species, to diversity in the number of species present in an ecological zone and finally diversity in the types of ecological zones itself.

Balancing biodiversity conservation and socio-economic development

Unfortunately, economic development and biodiversity conservation have always been pitted against one another demonstrating a lack of realization that India is dependent on its biodiversity for long-term food and livelihood security and economic stability. Promotion of natural resource accounting and ecological economics could be one way of ensuring that biodiversity is considered as a highly valuable resource that needs to be conserved and used sustainably rather than as a problem to be overcome by development project proponents. Besides this, appropriate and rigorous legal measures will have to be put in place to ensure that communities that live in natural resource and biodiversity rich areas are not short-changed. The lack of such measures and the neglect of such communities have been partly responsible for the creation of serious internal security issues in India.

Furthermore, although Environmental Impact Assessment [EIA] procedures are in place for large projects, most current EIAs are poor in quality with a primary concern to get projects passed somehow. EIAs are perceived by project proponents as negative, delay causing, inconvenient external impositions that need to be gone through as a formality. EIAs should become a truly professional undertaking with a statutory charter under the Environmental Protection Act, completely independent of project proponents and the people proposing them (Iyer, 2007).

Despite setting up numerous national parks and much publicized projects like Project Tiger and Project Elephant, conservation efforts in India leave much to be desired. They have largely failed to protect the rights and promote the social and economic development of communities that have traditionally depended on the forests for their livelihood. Without community support, conservation efforts have struggled to meet their objectives.
Eco-tourism is a surprisingly neglected nexus between biodiversity conservation and local economic development. A vast majority of Indian wildlife sanctuaries are not able to sustain themselves economically and thus local communities are unable to see the economic benefits of conservation as eco-tourism is highly underdeveloped (and often misconceived). India has much to learn from countries like South Africa and Kenya in this regard.

Facilitating quality research, better conservation and development practices

Lack of a comprehensive and accurate biodiversity database is a serious impediment to the success of conservation efforts. India also needs to facilitate high quality research that will help direct conservation efforts better and contribute towards food security and health and well-being.

At the same time it is imperative that appropriate measures are put in place to monitor and regulate the application of biological research. The present conflicts between various ministries and regulatory bodies point to the confusion that prevails. Advances in biotechnology do not preclude the necessity for maintaining adequate diversity in the gene pool of our food sources since it is critical to overall resilience against diseases, climate change and other such risks. Misguided afforestation efforts resulting in large-scale monocultures of eucalyptus, casuarinas, pines and the prevalence of exotic invasive species are testimony to the lack of application of biodiversity research in conservation efforts.

There is an urgent need to generate adequate understanding about the potential for environmental services offered by urban environmental systems like wetlands, mountain and plateau catchments, natural waterways, urban forests and their associated biodiversity.

Environmental strategies that protect these natural systems, limit habitat fragmentation and enrich overall biodiversity need to be integrated into urban planning proposals.

Climate change, forests and biodiversity

According to the Millennium Ecosystem Assessment Report, climate change is likely to be the dominant direct driver of biodiversity loss by the end of the century. Although the life forms we see around us today have evolved and adapted over millennia, very few will be able to adapt to the pace of change imposed by climate change.

At the same time, biodiversity resources can provide the best methods of mitigating climate change impacts. Habitats must be preserved to facilitate the long-term adaptation of biodiversity and fully integrate biodiversity considerations into mitigation and adaptation plans. If the threats of biodiversity loss and climate change are tackled together, the prospects for adapting successfully to the challenges of the coming decades will be much improved (National Biodiversity Authority).

But climate change also offers opportunities to replenish India's forests. The Ministry for Environment and Forests has announced its target to double India's forest cover by 2020 and create of a fund for the regeneration and management of forests. While carbon sequestration by trees can be promoted through afforestation efforts, these should also be evaluated critically from a biodiversity perspective before being implements.

Besides the economic and resource rationale for conserving biodiversity, one must build awareness about the cultural and spiritual value of biodiversity. Anthropocentrism aside, a true conservation ethic can be promoted only with the understanding that humans are but one node in the intricate and interdependent web of life.

Facilitating policy interventions

Almost 10 years after the ratification of the Convention on Biological Diversity [CBD], India enacted its own Biological Diversity Act in 2002 in order to achieve the stated goals of the CBD. Although the Act proposes a range of measures to conserve biological resources, protect access rights and promote sharing of benefits arising from them, the Biological Diversity Rules (2004) do not elaborate on the benefit sharing mechanisms or the legal rights of the community level Biodiversity Management Committees and restricts itself to explaining their role in the documentation and inventory of biological resources. The Forest Rights Act, although controversial, has been a concrete step in the direction of addressing the shortcomings of colonial forest laws and provides significant resettlement and livelihood rights in case forest dwelling communities are displaced as a result of conservation efforts.

Urgent policy interventions are required in order to set up appropriate regulatory bodies to deal with environmental clearance of projects and for regulating application of biological research. Within the realm of biotechnology, while the safety and significance of current developments is hotly contested by experts, it is evident that India at present lacks even the basic regulatory frameworks that will help identify food that has been genetically modified.

Appropriate policies need to be put in place in order to facilitate the transition to a natural resource inclusive accounting system when it comes to calculating GDP, such that 8% growth does not happen at the expense of 8% of the world's biodiversity. Economic growth eventually depends on the health of the biosphere and the long term stability and sustainability of both are inextricably interlinked.

12. Inclusive Socio-Political Cultures

Creating cultures of plurality that recognise, accommodate and celebrate multiple differences as well as providing spaces for dissent, democratic engagement and dialogue

1) Creating and Protecting Plurality

- Recognising the idea of India as a shared plural space by opposing monolithic cultural views about the nation;
- Addressing collectivities of caste, community, gender, ethnicity, religion and class as essential to our understanding of the nation and who we are as people and citizens;
- Conceptualising and practising a constitutional morality and expanding a sense of active, substantive and engaged citizenship;
- Vigorously defending freedom of speech, expression, belief, faith and worship, especially by buttressing institutional and legal support mechanisms around dissent and conflict.

2) Protecting Dissent and Democratic Engagement

- Legally, socially and physically protecting dissenting and critical voices;
- Restructuring laws on contempt of court, obscenity, defamation, and those that compromise freedom of expression;
- Balancing security and terror legislation and mitigating its impact on civil liberties and dissent;
- Safeguarding against cultural and moral policing by any actors, including religious groups, associations, the family and political parties.

3) Transforming, opening and diversifying media and information

- Ensuring freedom and autonomy of the press;
- Democratising and expanding access to media and information, from traditional media to everyday discursive spaces to new media and information technologies;
- Institutionally, technologically and economically supporting new media in Indian languages;
- Creating space for and encouraging diversity (including voices 'from below' and subaltern perspectives) as indispensable prerequisites for shared discursive practices;
- Creating open, public and accessible sites of information exchange and debate.

4) Rethinking Identities and Difference

- Recognising and celebrating hybridity, difference, and fluidity of identity as inherent and desirable features of individual and social being;
- Recognition of multiple and fluid layers of identity as a precondition for cultural accommodation;
- Emphasising an identity as constitutional citizens alongside community-based identities.

5) Re-engaging arts and aesthetics

- Opening a vigorous and vital engagement with arts and aesthetics, especially in open, accessible and public spaces and discourses;
- Creating and supporting open and participatory collaborative spaces;
- Dynamically engaging with the idea and practices of multiple Indian traditions;
- Documenting and supporting (institutional and financially) the dying arts and performing art traditions.

Inclusive Socio-Political Cultures: Challenges and Opportunities

Protecting Plurality and Re-thinking Culture

Central to the idea of India's survival is the notion of plurality and difference. As a multi-religious, linguistic, and ethnic nation, India has, in its young history of sixty three years, been fraught with debates concerning itself and its people. This battle that rankles for the soul of the country will, among other issues, decide the kind of nation India is and wants to be. India managed its linguistic diversity by fragmenting its states according to language. However, issues of religious and other minorities continue to be much fought over. Increasingly, in recent memory, there is paucity of genuine public spaces for dissent and dialogue over the fundamentals, resulting in increasing polarisation along strictly defined lines of collective identity. The reactions of 'tradition' against modernity reflects a genuine need for increasing access to marginalised groups who are otherwise left out of the developmental discourse in multiple ways.

There is on one hand, the need for genuine delivery of basic services to groups who have been historically discriminated against. On the other hand, with increasing urbanisation, there will also be recognition of hybridity and the fluidity of identity, as shared constructs, as much a part of individual's sense of being as essential to the nation's cultural imagination.

It is critical that India vigorously defend its identity as a pluralist and tolerant society and culture. This defence will be developmental, economic, social, cultural, aesthetic and political. In terms of its vision, the reconstruction of a constitutional morality and an active, engaged and substantive citizenship can provide a sense of identity that, alongside community-based identities, does not seek to denigrate or ignore the latter but places them beside one's democratic allegiances and duties as citizens.

The Defence of Dissent

The shrinking of democratic spaces in recent times is a cause for concern in an otherwise strong history of critical expression in Indian democratic history. Yet the use of contempt of court, obscenity and defamation laws, among others, and a cultural intolerance towards genuine critique and difference of opinion has slowly begun to take root in India and compromise the freedom to dissent and criticise. Given the rise of armed resistance against the State, violence related to development-related displacement of the poor and increasing fragmentation in social cohesion due to persistent and widening poverty and inequality, the need for public debates and engagement to prevent escalation of internal economic and social divisions is critical and immediately needed.

The political free speech often celebrated in India also stands alongside strong cultural and moral silencing, especially within 'private' spaces like the family and religion. The emergence of cultural and moral policing in the public sphere, however, has been marked since the emergence of the Hindu Right in the 1990s. From the Shiv Sena's anti-migrant campaign in a city as cosmopolitan and fiercely tolerant as Mumbai to the Shiv Rama Sene in Karnataka;Operation Romeo launched against 'obscenity' in Meerut and the women of Dukhtaran-e-Mllat who policed women's dresses and appearance in public in Srinagar; aggressive cultural policing has begun to appear across urban India. The lack of a firm cultural, legal, and political response to these actors and a strong defence of India's secular and democratic credentials is essential.

Information and Open Media

A critical part of creating a democratic and inclusive culture is a robust, critical and free press. India has a massive media industry. It is the second largest market in the world for newspapers, consuming close to 100 million newspaper copies. It also has nearly 1400 TV broadcasting stations both in English and in indigenous languages. Global media giants have been slowly increasing their stake within the Indian market. The last three years have seen US$88 million in FDI, as the government allows 20percent FDI in FM Radio, with the requirement that editorial management must remain Indian. However, this expansion of media has been accompanied by the centralisation of ownership of media, which could affect its ability to be critical and free of influence.

The corporatisation of media houses makes democratising access to media and information even more critical to ensure that subaltern and critical voices are part of public debates and discourse at all levels, including those of national policy making. Using technologies and open media frames, a range of spaces and institutions must be created and supported – both public and private – that promote and act as spaces of public and inclusive debate. Voices that represent and speak for less institutionally powerful actors must be particularly supported and protected. Community radio and local media production has a long history in India though it has never been able to scale due the lack of adequate infrastructural support.

These spaces must be particularly sensitive to expanding access and production in non-English Indian languages and for dissemination through radio, television, Internet-based platforms as well as the written word.

Re-engaging Culture

Critical, and not peripheral to the idea of shared discursive practices that cut across boundaries of multiple homogenised identities, is the celebration of the arts and aesthetics and cultures of communities and individuals. Cultures or 'the way we are', bridge distances and barriers just as they create conflict. Since they so intrinsically belong to people and not to the State, internal discourse and cross-cultural dialogue is the only way India can continue to live with its multiple differences in a cohesive and meaningful manner. State facilitation can build respect, and create more ideas of dialogue and discovery. It is here that a move away from strict materiality looks imminent and may even make the much clichéd notion of 'unity in diversity' appear more palpable.

It is essential to engage in arts and crafts and also living heritage as embodied by everyday rituals and festivals. Engaging and 'conserving' multiple traditions is an important part of Indian plurality and also key for its resilience. This celebration of diversity is also the bulwark to stave off isolation and homogenisation.

13. Peri-Urban and Rural-Urban Linkages

Balanced Urbanisation, Sustainable Peri-Urban Development and Symbiotic Rural-Urban Linkages

1) Increase in Agricultural Income and Diversification of Livelihoods in Rural Areas

- Increasing agriculture incomes by providing access to markets in urban areas;
- Mediating supply chains and using regulation to rationalise input costs;
- Increasing secondary and tertiary livelihoods to reduce labour-land ratio;
- Increasing rural industrial potential by enabling access to roads, energy and water Implementing appropriate land reforms;
- Boosting the rural economy through creation of green jobs;
- Ensuring transparent, sustainable and equitable land allocation, particularly in conversion of agricultural land into large urban, industrial and economic zone.

2) Infrastructure and Access

- Providing road connectivity to rural areas to ensure mobility of goods from production sites to multiple markets;
- Providing reliable and regular power to enable local industries and other employment opportunities;
- Extending the IT and telecom network to reduce information asymmetries;
- Extending credit to farmers to enable financial inclusion and promote enterprise.

3) Distributed and Sustainable Urbanisation

- Sustainable growth of cities that utilises land optimally, avoids urban sprawls and reduces externalities;
- Distributed urbanisation through a well developed, distributed and decentralised settlement structure and infrastructure network;
- Developing smaller towns through a mix of public and private investment, physical and social infrastructure and long term planning;
- Integrating temporal and spatial mobility amongst rural, peri-urban and urban settlements into planning and policy-making;

4) Balanced and Sustainable Regional Development

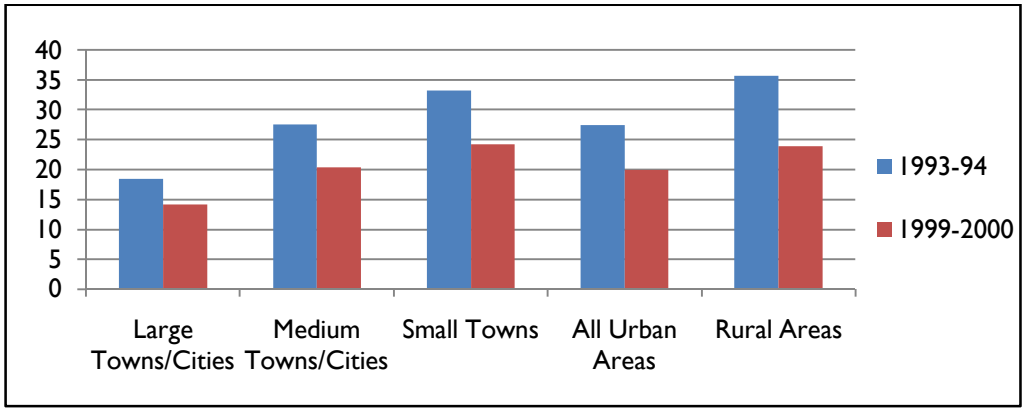
- Decentralising governance to ensure devolution of decision-making;
- Ensuring environment and resource conflicts are minimised through appropriate regional plans;
- Enabling synergy between rural, peri-urban and urban development;

Urban-Rural Linkages: Challenges and Opportunities

Increase in Agricultural Income and Diversification of Livelihoods

India's rapid growth and a sharp increase in GDP have occurred alongside a livelihood-growth mismatch. The income from farming has grown slowly compared to inflation over the years and non-farm employment has particularly lagged. This is a matter of critical concern; India is not expected to be more than 50-60 percent urban, implying that the rural livelihoods will remain a dominant issue of political and economic concern even in an urbanising country.

Figure 23: Percentage of Poor in Different Size Classes of Cities/Towns (1993-2000)



Source: Kundu & Sarangi (2005)

India reached its capacity in terms of arable land under cultivation in the 1960. This coupled with the uneven and unequal distribution of land holdings means that a substantial portion of the households cannot survive merely on cultivation. In rural areas, limited diversification has taken place within the primary sector e. g. around fishery, animal husbandry and forestry and even less within the secondary and tertiary sectors e.g. food processing.

To improve the livelihoods prospects of nearly two-third of the Indian population living in rural areas and boost the rural economy, secondary and tertiary employment will need to be developed. Public macro-policy interventions in rural India have tended to focus on employment, basic needs and poverty alleviation, all of which are critical, but cannot address the need of sustained and diverse employment generation in the long-term. This can happen through rural industries, service sector enterprises, small businesses or new livelihood strategies like green job creation. A range of interventions will be needed before this can occur: infrastructural (roads, connectivity, power and water provision for commercial needs), fiscal and regulatory incentives to encourage industry to locate rurally and a range of credit-based, financial and social supports to encourage micro enterprise and small businesses. Micro enterprise and micro credit development needs to be given strong fillip through range of public, private and civil society interventions.

Infrastructure and Access

To ensure income from agriculture and for diversification of livelihoods, it is necessary to provide better infrastructure and access to services. While massive public road building has taken place since the late 1990, as much as 44percent of the rural population is not covered by the rural road network and many smaller villages do not have all weather road access to the nearest town (NCAER, 2002). Quality access to towns is imperative to ensure movement of people (for jobs, healthcare, education, governance), access to markets and delivery of services.

As discussed in the earlier section on physical infrastructure, access to domestic water is one area in which India has made considerable progress, though currently challenged by source sustainability and quality, operation and maintenance issues. The expected improvement in environmental health outcomes is still at a far distance because of abysmal sanitation conditions. Solid waste management is emerging as a serious challenge even in rural India

Lighting and energy for motive power and production are amongst the most serious development challenges that India faces. Economic transformation, improvement in quality of life and livelihood diversification is virtually impossible without widespread availability of energy services of good quality. This is a politically and institutionally confounded space that will need to be directly addressed.

Although India has made a good start in telecom services large differentials remain between urban and rural areas as the cost of expanding into rural areas is much higher than urban areas (IDFC, 2008). By making provision for sharing of backbone infrastructure and towers, connectivity needs to be increased. So far, IT provision has lagged behind the telecom services. However, with the introduction of 3G and broadband services, India should enable internet access in villages. Access to information can remove information asymmetry; can enable basic service delivery and capabilities; can help improve governance, reduce disaster and risk resolutions and can potentially remove market distortions in the medium run. It is also important to ensure access to credit to enable financial inclusion.

Distributed and Sustainable Urbanisation

India's urbanisation over the past few decades has been skewed: with a tendency to concentrate around Class I cities while smaller cities and towns have remained stagnant. The metropolitan regions of NCR, Mumbai-Pune, Bangalore and Kolkata account for 48 percent of urban population. It is estimated that by 2050, there will be 70-odd million plus cities in India. The government flagship JNNURM programme incentivises 60-odd cities - which often have some institutional capacity and can raise resources, thus skewing the pattern further (Sivaramakrishnan et al, 2006). Moreover, much of this growth is concentrated in certain states and regions; with highly urbanised states growing faster than the less urbanised states, often resulting in unequal growth among states.

Table 4: Growth of Class I Towns in India (Towns with Population 100,000 and above)

Year	No. of Towns	Share (%) in Urban Population	Annual Exp. Growth Rates (%)
1951	76	44.63	
1961	102	51.42	3.72
1971	148	57.24	4.29
1981	218	60.37	4.34
1991	300	65.2	3.84
2001	393	68.67	3.42

Source: MHUPA and UNDP (2009)

It is important for India to develop cities in less urbanised states, as well as develop an appropriate hierarchy of cities and towns and villages. This would help in developing the rural economy and the villages, building stronger connections to smaller towns through a mix of public and private investment by providing infrastructure, livelihood opportunities, in the secondary and tertiary sectors (Satterthwaite, 2003).

Apart from the problem of concentration of opportunities, mega-cities also result in large environmental externalities. Depending on their resource base and other regional factors, limiting city size to enable sustainability and resilience are worth considering. Currently, cities in India are growing unsustainably and current systems in the cities are unsustainable resulting in large environmental impacts on its citizens and externalities in its region. Pollution of surface and ground water, waste dumps, excessive extraction of minerals and a massive waste of water, energy and materials characterise Indian cities, even though this is happening often at an order of magnitude less than many parts of the world. India has to ensure that the environmental impacts of urbanisation are minimised and its urban systems move from linear to closed looped cycles of production, consumption, recycling and re-use.

Balanced and Sustainable Regional Development

The 73rd and 74thConstitutional Amendments passed in the 1990s provide for decentralisation and devolution of powers to third tier of government to enable better decision making and local control. The implementation of this decentralisation has been highly variable across the country. This process also called for the formation of District Planning Committees (DPCs) to ensure integrated development of rural and urban areas, although only a few districts have constituted DPCs. Integrated regional development facilitated by institutional arrangements like DPCs could lead to future synergies between the rural and urban areas.

14. Access to Justice

Improving access to justice in keeping with the spirit of the Constitution's Preamble, i.e. Justice: Social, Economic and Political.

1) *Enable access to justice*

- Reinvigorating the goal of law in ensuring political and socio-economic freedoms;
- Building a more dynamic relationship between the Judiciary and the Executive and Legislature;
- Encouraging the professionalisation of the justice system.

2) *Enable speedier access to the legal and judicial system*

- Identifying particular problem areas of law and resolving them via legislative intervention;
- Identifying and resolving procedural bottlenecks in civil courts via judicial appointment, improved infrastructure and support services, fast track procedures and ADR mechanisms;
- Creating a National Grid of Arrears;
- Encouraging nationwide legal aid systems to help the indigent access the judicial system.

3) *Enhance legal and judicial accountability*

- Encouraging public, open and transparent judicial processes as an exemplar for public systems;
- Enabling better selection, training and performance management of judiciary and court management officials;
- Optimal use of infrastructure through Case Management Systems and technology, including computerisation and e-Courts where possible.

4) *Encourage mechanisms for mediation & resolution of political conflict*

- Situating political conflict within larger underlying issues of development and resource use and creating sustained political and dialogue in arenas of prolonged conflict and estrangement;
- Encouraging empowered citizenry through effective and regular grievance redressal mechanisms consistent with constitutional frames and values;
- Effective and powerful autonomous institutional checks on State and non-State actors' use of violence;
- Comprehensive reform of the penal and criminal justice system.

Access to Justice: Challenges and Opportunities

The political settlement at the time of independence envisaged a constitutional democracy where the institutions of the State, the democratic apparatus, as well as justice systems would function in accordance with the tenets laid down in the Constitution. In the last sixty odd years, since its adoption, the country has had relative democratic stability for the most part, barring the interlude in the Emergency years where constitutional provisions and principles stood abrogated. It is however, in the functioning of the justice system, where the system stands seriously stretched and challenged.

There were essentially two kinds of visions that the Constitutional settlement stood for in the dawn of the new country: the first was political freedoms for its citizens, which guaranteed the rights of personal liberty and liberty of thought, expression, belief, faith and worship. The second vision sought to use the law as a facilitating lever, to ensure social and economic transformation. The interplay of the two values, overlapping and yet sometimes contrasting, was enshrined in the Fundamental Rights and the Directive Principles of State Policy, with the fundamental right to constitutional remedies guaranteeing the right to approach the judiciary in case of perceived violation of fundamental rights. The Directive Principles of State Policy, while not legally enforceable, were deemed to be fundamental in the governance of the country.

This transformative agenda, while making important strides, nevertheless remains in the realm of wishful thinking for a majority of the country's denizens. The right to life has been expanded to guarantee among others, livelihood, health, environment, food, education, privacy, legal aid, shelter. However laudatory this array of desiderata on the part of the Judiciary seems, the challenges of implementation of these rights essentially means that rights on paper mean little if they are not translated into fulfilment across the detail of the everyday. These issues expose the brutal fault lines between judicial and political action.

The relationships between the Executive, Legislature and the Judiciary, in the original scheme of Separation of Powers, were expected to be tenuous, so that the contestations and negotiations would balance power, and prevent undue excess and abuse by any of these three arms. These negotiations are never settled, but at the same time, there remains an unfulfilled need to bring about greater accountability, especially in the judicial branch, particularly in keeping with judicial autonomy ostensibly for the independent interpretation of what the law is and should be.

Timely Justice

On the procedural side, access to justice has become so severe and such an endemic challenge across India that it is now affecting state legitimacy. The backlog in cases within the judicial system has run into millions just at the appellate level. It is critical therefore, to intervene systemically from identifying particular areas of law where arrears are severe: matrimonial and dowry related cases; cheque bouncing; corruption cases; other criminal cases; civil suits and motor accident and traffic related cases. Disposal levels will need to be raised from around 60 percent of total case load to over 95 percent apart from clearing backlogs.

This will be enabled by addressing procedural bottlenecks for example by: a) Adopting 'no-adjournment' as the rule b) Distinguishing between 'simple' and 'complex' cases at filing to reduce the delay in simple cases which can be taken up together according to their year and number. c) Increasing efficiency of interlocutory orders, appearance of witnesses and accused (in criminal cases). Computerised monitoring and use of technology can help

address some of the delays. In addition, fast track procedures could be evolved without detracting from due process. An exhaustion of alternative remedies through alternative dispute resolution could also help decrease the load on courts, reduce costs and improve time lags. A national grid of arrears could be set up which could, through computerisation, assess arrears at multiple levels and set up systems to manage them optimally and increase efficiency.

Human Resources

The deficit of 234 out of 886 judges in the High Courts and 2998 of 16,721 judicial posts in District and subordinate Courts need to be filled expeditiously. The Collegium process for selection of Judges requires guidelines to make it less cumbersome and transparent and to deal with situations of deadlock. Clear timelines should also be laid down for appointments. Enactment of a law to ensure Judicial Accountability and adherence to RTI norms will enable transparency in the Judiciary.

Striking at the very heart of the legal system however, is a dearth of professionalization. Structural barriers continue to prevent entry, access and growth within the legal profession. Further, procedures for appointment of judges at the highest level remain deeply opaque. It is here that the system demands democratisation, professionalization and serious answers on accountability. If the lawyers and judges are admittedly meant to be the vital organs of a smoothly functioning legal system, it is necessary for the improvements and transformations to start there itself.

The Executive could also play a collaborative role, in keeping with the principles of Judicial independence and accountability.

New professionals called Court Managers with adequate financial incentives could help make the justice system more effective. Such professionals could be hired from law students as well as other areas and could help usher in a more transparent and professionally supported case management system.

A Case Management System will bring in more comprehensiveness in laying out time frames with the active involvement of the Judiciary. It will involve time-table setting and monitoring lawsuits. More time could be allocated to complex cases involving a multiplicity of procedures while simple cases can be sorted out quickly, reducing delays.

It may be yet not too late to look within and self-reflect as a necessary first step that could pave the ground for a more elaborated re-envisioning and re-imagining of the original goals that the Constitution meant to stand for. In its absence, the disenchantment with the justice apparatus stands to threaten the carefully laid down trust in the institutional functioning of the country. The newer challenges to the Indian state in the form of new forms of Maoism are but appropriations of the vacuum of governance in the face of scarcity and depleted resources and severe underdevelopment. The justice system, as a mechanism of resolving conflict and ensuring political and economic freedoms stands seriously challenged. This is as much of a political wake up call for it, as that epochal moment of 1947.

15. Enabling Cultures of Innovation, Knowledge and Enterprise

Creating conducive regulatory, institutional, and financial frames for the transformation of higher education, and the promotion of private and state-led research and development.

1) *Leading Research and Development*

- Establishing priorities for research, development and education by setting national grand challenges;
- Creating a national research agenda that reflects an inclusive innovation approach and balances new discovery with tangible outcomes for the poor;
- Expanding public investment and leveraging private investment in research, innovation and development;
- Expanding sites and institutions of research using a wide variety of academic, social, industrial, public and private sites, actors and networks;
- Increasing early-stage support in new research to reduce risk and encourage proof-of-concept based endeavours;
- Bringing back talent from the diaspora into Indian institutions through a string of incentives and new institutional sites.

2) *Creating Conducive Regulatory Frames*

- Fiscal, financial and regulatory incentives to push inclusive innovation, particularly in underserved, high-risk and low financial return areas;
- Building better research-government-industry relations to ensure translation of research into products and tangible outcomes;
- Creating flexible and relevant intellectual property regimes to protect innovation but balancing these with degrees of openness and accessibility to encourage non-proprietorial co-operation;
- Investing in ICT and other support infrastructure to enable research as well as information access and dissemination.

3) *Transforming Secondary and Higher Education*

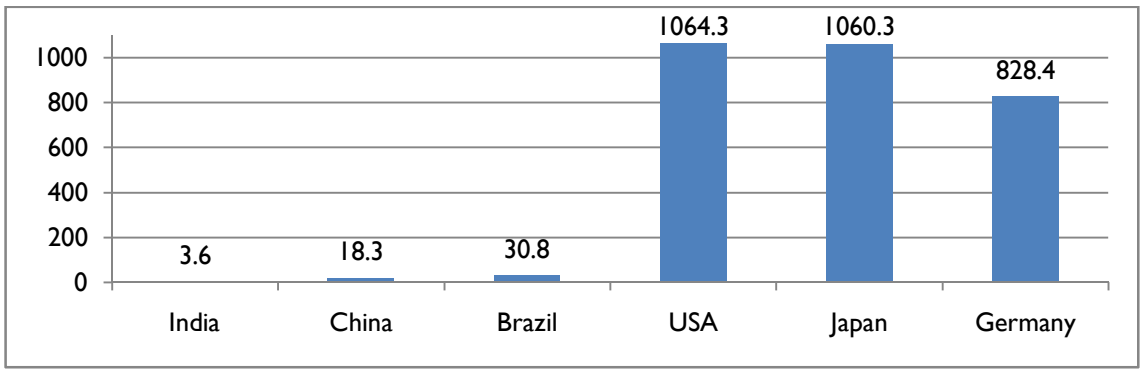
- Expanding research capacity and resources at institutes of higher education beyond elite institutions like the IITs and IIMs;
- Creating career pathways into research for a large number of diverse college graduates;
- Creating knowledge cultures in institutes of higher education that reward and incentivise innovation and criticality;
- Building on the emerging pool of secondary-schooled citizens and improving skills and capacities at their level.

Cultures of Innovation, Knowledge: Challenges and Opportunities

Expanding Investment in Research

Aggregate funding for research and development in India is currently 0.8 percent of GDP and has never exceeded 1 percent of GDP. Nearly 80 percent of this funding emerges from the public sector through large, centralised institutions like the Council for Scientific and Industrial Research (CSIR) and other similar bodies. China spends 1.2 percent, while developed countries spend up to 3 percent of their GDP on R & D.

Figure 24: R&D Expenditure per capita across countries in US$ (2005)

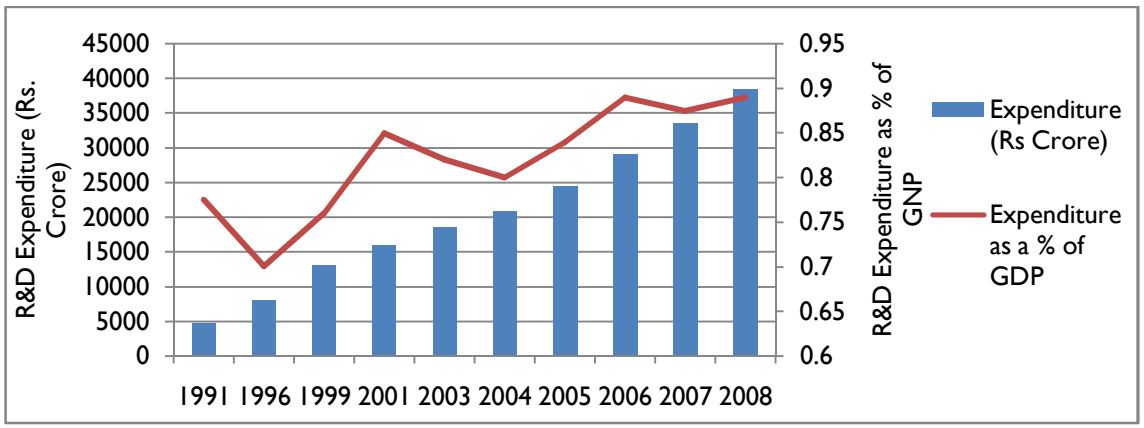


Sources: 1. World Development Indicators 2. UNESCO and OECD main S&T indicators (2005)

As the knowledge economy becomes increasingly important to India along and the need for innovative responses to its growing developmental challenges becomes more pressing, expenditure on knowledge and innovation will not just have to expand but also made more varied in its sources and applications, bringing in industry, the private and non-profit sectors along with the government.

The XIth plan increases public investment in R & D five-fold from Rs 25506 crores to Rs 121972 crores (Planning Commission, 2006). The sponsored R&D program, the Small Business Innovation Research Initiative as well as the New Millennium Indian Technology Leadership Initiative are all steps to promote, invest in and further research in India. Each needs to be deepened; access has to be widened not just for reasons of excellence but also diversity in foci.

Figure 25: Total National R&D Expenditure and as Percentage of GNP



Source: Research & Development Statistics at a Glance (2007-08)

With regards to research funding, both the quantum, and its nature must be changed. Public funding for research in India remains bureaucratic and difficult to obtain, often comes with a multitude of conditions and rarely reward high-risk high-return endeavours. In order to encourage risk-taking and adequate scale, funding must be provided much earlier in the innovation cycle. Access to seed money needs to be greatly expanded and simplified, especially micro-funding for non-institutionally affiliated researchers and practitioners.

Inclusive Innovation

India must follow an inclusive innovation approach that focuses not just on the frontiers of technological and scientific innovation but also on the critical development needs of the nation in terms of particular sectors and applications. Regulatory and incentive structures should promote, for example, grassroots innovations that bring tangible benefits to the poor, research in specific sectors like rural technology, non-farm employment and manufacturing. Integration of R & D across sectoral ministries can ensure this to an extent.

Some good first steps have been taken in this directions: the CSIR has developed technology applications for rural India, and university and formal private initiatives (such as e-Choupal) have delivered benefits. The National Innovation Foundation has a repository of more than 50,000 grassroots innovations and traditional knowledge practices.

One way of setting the priorities of a national research agenda is by framing "grand challenges" that lay out short and medium term research priorities. These, when backed by financial and institutional support, can be used to ensure inclusivity in the foci and geographies of research across the country. These agendas must also support the key comparative advantages that India has in R & D in particular sectors like technology, science and health. Expanding R & D, institutional infrastructure and building human resource capacity in these areas should be key short-term foci for the country's research agenda.

Building Human Resource Capacity

The number of persons doing research and development in Scandinavian countries and the US are 7,000 and 4,700 per million of population respectively. In India, there are only 156 researchers per million of population. Much of this is often attributed to the continuing outflow of highly trained and specialised researchers from India to the West. This trend is slowly changing, with the return of many diasporic Indians to institutions in India. Further institutional and incentive schemes have to be put in place to enable and encourage this return but also to create centres and sites of research excellence that attract and retain the best global talent.

Private industry has spent nearly $1.3bn in research and product development in India since 1994, much of it through new research centres being established by multinational technology and pharmaceutical firms (CSIR, 2006). These centres, while being located in India, are able to attract the best of global and Indian talent. They could act as examples of innovation that is more aligned with national priorities.

Enabling Translation

Looking at the market and at indicators such as patents filed, it is clear that a fundamental concern in India remains translating research, fundamental science and even traditional knowledge into commercially viable products or innovations in services and processes. An exception to this remains the pharmaceutical industry that has managed to sustain and

innovate around generic drug production. An emphasis on translation and application and a greater number of institutes focusing on applied research and product development is necessary.

A core challenge in this is enabling a balanced reform of the Intellectual Property Rights (IPR) regime. While IPR laws in India need to be strengthened, the emerging and expanding opportunity for innovation within open intellectual property regimes must be explored, especially in a context where R & D resource allocations may remain difficult to mobilise for some time to come.

16. Responsible and Pro-Active Regional Geo-political Engagement:

Three key areas of engagement: regional stability, trade, sustainability (including climate change) and human security.

1) *Reworking political relationships with its immediate neighbours and bringing stability to the South Asian and greater Asian region*
   - Improved relationship with Pakistan;
   - Reworking of relationship with Bangladesh;
   - Continuing co-operative relationship with Nepal, Bhutan and Sri Lanka;
   - Acknowledging the strategic importance of Afghanistan and Myanmar;
   - Confidence building measures and mutual cooperation with China.

2) *Increasing regional economic cooperation;*
   - Increasing economic cooperation within the region and increased intra-regional trade.

3) *Building beneficial relationships across the Global South and improving market relations and possibilities of technology and other transfers*
   - Developing strong economic and political linkages with 'Global South' more strongly;
   - Facilitating technology transfers in a variety of areas e.g. intellectual property transfers in new climate change technologies;
   - Assume a strategic leadership role in regional and global security;
   - Assume a leadership role in international negotiations in trade and environment;
   - Acquire a more significant leadership as a permanent member of an expanded Security Council;
   - Assume greater importance in the decision making of the Bretton Woods institutions.

4) *Demonstrating a sustainability transition for others to from*
   - Demonstrating an environmentally sustainable development pathway for similarly placed developing countries (including building win-win solutions with China);
   - Creating strategic and market opportunities for the region that facilitate a 'green' economy;
   - Holding a responsible global position in terms of natural resource use.

Geo-Political Engagement: Challenges and Opportunities

India had turned 'inwards', to engage with its development, governance and political challenges over much of the 1960s and 1970s. Barring odd political skirmishes with Pakistan and China, an opening up to serious global engagement started in the 1980s and accelerated over the 1990s to see India emerge as a future economic and geopolitical power. India will need to step up to its international leadership responsibilities and engage with a range of security and geostrategic concerns as consequence of its population and market size and economic performance (Baru, 2006).

India has historically been primarily a land-based power. But this is changing with the development of a blue water Navy, strategic nuclear deterrence and missile-based power projection capability. This would imply that India should be able to muster enough hard and soft power to effectively protect its future economic and commercial interests in the region and within the Indian Ocean basin, even as China increasingly makes its presence felt in the region. As Indian commercial and transnational companies expand their engagement with Africa, Central Asia, South-east and East Asia, both Indian hard and soft power projection capabilities will need to come into play (Cohen, 2002).

It is in the area of soft power where India stands poised to play a more significant role. With increasing globalisation of goods, peoples and services, India can be expected to deepen its traditional strength of soft power, ranging from the influence of its extensive and now increasingly prosperous diaspora; media and cultural products; access to Indian higher education, medical and knowledge services.

Regional Cooperation and Relationships with Neighbours

The most important immediate strategic challenges that India faces are in South Asia, especially its relationships with Pakistan, Bangladesh, Nepal and Sri Lanka and by extension Afghanistan and Myanmar and deeper still, China.

The shadow of colonial engagement and Partition is still cast wide over the region, leading to one of the lowest levels of intra-regional trade anywhere in the world in spite massive economic and financial incentives to enabling this.

An appropriate reworking of India's relationship with Bangladesh would benefit both countries considerably including providing Bangladesh greater water security, access to Indian markets, and significant investment, technological and management support from India. It could give India access to surplus energy sources in Bangladesh and more important dramatically alter the relationship of India's landlocked north-eastern states with the rest of the country. India needs to look at Bangladesh increasingly from a human security viewpoint in light of future climate change concerns. Further, the presence of Islamic fundamentalism in Bangladesh spilling over into India and networking with similar elements in the region, requires India's attention as well as co-operative intervention and support.

The ongoing democratic political settlement in Nepal provides a unique opportunity to reconsider the legacy patronage-led relationship between India and its northern neighbour. This could provide considerable economic and livelihood benefits to Nepal, and strategic comfort to India that neither Chinese nor Pakistani influences would come to take root in the fledgling Nepalese democracy.

Along with China, it is Pakistan that will continue to vex India's regional relationship. India's historically troubled relationship with Pakistan is taking a new turn, with the re-entry of US interests in the region and the nuclear power status that both India and Pakistan possess. Post 26-11, India's relationship with Pakistan has further ebbed and there is now recognition of the challenges that the Pakistan State itself is facing from within in the face of pan-Islamic fundamentalism. It is unclear where the intermittent Indo-Pakistani peace process and confidence building measures will lead, but it is clear that a serious bilateral engagement will be necessary to resolve historical points of conflict like Kashmir.

Within South Asia, India is clearly the unacknowledged regional hegemony leading to a series of negative externalities including a low level of intraregional trade, consequent lower levels of regional economic activity and integration. India may need to take dramatic steps to alter its relationship with its neighbours to a more equal footing, leading to a significant spurt of trade, greater economic integration, and the development of many of its peripheral areas (e.g. the north-eastern states) which at constrained by regional geopolitical competition.

Global Positioning

In return for this increasing role in global affairs, India would expect to become an equal partner in a reformed UN Security Council system, the Bretton Woods institutions, and to have an important say in the ongoing reconstitution of the global financial and public goods governance systems.

The Indian economy has benefited from its contact with the global economy over the last two decades in multiple ways e. g. exports and consumer choice have increased significantly. Accessibility of technology, reduction in the prices of some commodities and durables and overall improvement in productivity and efficiency have come partly because of the competition and connectivity with global business.

The benefits of global engagement, however, have been limited largely to urban residents and the middle and upper classes. There is therefore, considerable resistance from stakeholders who have been displaced (e.g. blue-collar workers who are being forced to join the informal sector or rural households, whose land had been taken for factories and mines) and those who have gained little from the recent spurt of economic growth.

Only select Indian cities that have been singled out to become global hubs have become sites of considerable public and private investment, livelihood and infrastructure creation enhancing the growth differential with other lagging centres. This needs to be urgently corrected via both public and private investments and institutional capacity building.

The development of new Indian cities and urban regions could well respond to some of these opportunities, especially along India's borders; in the strategic gaps along the western Konkan coast, two long stretches along India's eastern seaboard and in the Andaman and Nicobar islands. The development of new offshore and terrestrial energy resources along the continental shelf (e.g. the Krishna-Godavari basin off Andhra Pradesh and in Rajasthan) could also considerably alter spatial patterns of urban development.

Regional and Global Leadership

India is placed uniquely to demonstrate a sustainability transition for the region as well as the rest of the world. Its low current per capita ecological footprint, provides an opportunity for tunnelling through.

VI. INSTITUTIONS AND AGENTS OF CHANGE

Transformation within the next twenty years can only take place through the actions and interactions of agents/actors. Domestically, these include: the State (centre, states, and local bodies), the Private Sector, Civil Society, and Communities (including Faith Traditions). Each of these come with long histories, and have through complex interactions with each other, contributed to the shifting landscape of India's development and transformation.

1. The State

Much has been written about the Indian state and its changing role since Independence, from its role as the single dominant actor in the nation's political economy to its 'withdrawal' and restructuring through the 1980s and at an accelerated pace since reforms in 1991. Reforms aside, however, the state and its institutions – public systems, utilities, the public sector economy, development agencies and welfare programmes – remain some of the most significant actors the functioning of the country and its eventual transformation. This section focuses on the key aspects of the state and its institutions that will play an important role in transforming India in the next 20 years.

Political Parties

With the dominance of the Congress Party breaking post-emergency and insufficiency of reform in political parties, the emergence of alternatives to the Congress has now given way to nearly two decades of coalition politics. With no party able to reach required electoral numbers without a number of smaller partners, the rise of regional parties that hold disproportionate influence due to the coalition structure of power at the Centre has been a marked phenomenon in Indian politics over the last few decades. This has significant implications for political decision-making, particularly in resource allocation and the ability to undertake difficult and long-term strategic political and economic change.

On the other hand, the rise of lower caste representation in what has been called India's "silent revolution" (Jafferlot, 1999) has also altered the mobilisation and electoral dynamics of attaining and maintaining power for parties across the spectrum. Individual leaders of caste-based communities and vote banks have the power to significantly direct policy and transformation, though they have been, unfortunately, not nearly the agents of transformation that they were perhaps once hoped to be.

Macro-Economic Institutions

India's public financial systems have long performed well, using strong regulatory mechanisms to keep India's macro-economic health stable and relatively less vulnerable to shocks and recessions. The Reserve Bank of India maintains price stability and ensures adequate flow of credit to productive sectors. It has promoted a conservative yet expansive monetary policy to push the private sector since 1991 but has not comprised on its regulatory powers, often controlling areas that are not usually under the control of central banks. It has also shied away from capital account convertibility. It is widely believed that, along with a successful fiscal stimulus package, this has enabled the RBI to ensured overall economic stability and control inflation through two recessions (1997 and 2009). The state's regulatory control over key macro-economic policy, in other words, is expected to remain strong even after reforms.

Unfortunately, monetary policy has failed to engage the black and informal economy and thus inadvertently closed sites of potential action. Furthermore, it has failed to grapple with the key structural issue of education-employment-location-output mismatch.

In contrast, the state's economic growth and development strategy has brought in a set of new actors into significant economic sectors that were previously primarily state domains. Even as para-statal industries get "disinvested" and restructured, the involvement of large domestic and multi-national industrial conglomerates in multiple sectors of the economy has led to a transformed Indian marketplace and a significantly greater degree of integration into the global economy.

Another significant feature is the setting up of large Special Economic Zones (SEZs) across the country. In 2007, more than 500 SEZs had been proposed, 220 of which have already been created (which vary hugely in size). The SEZs, built by a range of institutional, legal and political mechanisms between the state and large domestic and international firms that are premised on a range of incentives, exemptions and exceptions for the developers, have and will continue to change economic and political governance in the country as these large economic zones gain further autonomy. That being said, the SEZ story cannot be overstated; poor performance has already led to the closure of some and there are signs that SEZs are being reconsidered altogether.

New Institutions of Infrastructure and Service Delivery

The provision of public infrastructure and basic services – from highways and ports to hospitals and water systems – by the state marked post-independence Indian political economy. Post-1991, significant shifts have occurred in the institutional structure and processes of delivering on these services. Primary amongst these has been the growth of Public Private Partnerships (PPPs) and Special Purpose Vehicles (SPVs) that has muddied the separation between the State and the private sector in the building of infrastructure and service delivery. An increasing number of SPVs are being primarily used to fund infrastructure projects such as road, ports, and airports. Similarly, PPPs have been increasingly used to build and operate roads, ports, some urban infrastructure (solid waste, expressways etc), tourism, health care, and educational institutions. These are likely to feature in growing numbers in the coming decades.

Post-liberalisation India has also seen the slow withdrawal of the State from the delivery of services. The State, due to fiscal and judicial imperatives as well as a new economic growth trajectory, is increasingly allowing for services to be operated by non-state institutions such as NGOs, private sectors, and PPPs (Chatterjee, 2010). That being said, there is a tendency for this claim to be overstated, and the State remains the dominant formal provider of services and support for the nation, particularly for the poor. Large transfer programmes like the Right to Education, NREGA, and Bharat Nirman are a case in point. Furthermore, even when outsourced, the State remains involved in the regulation and maintains oversight of such programmes. Thus, while the state may have marginally withdrawn from some sectors, it strongly maintains its role as a regulator, arbitrator and an allocator of resources and plays the dominant role in setting policy, priorities and operationalising programmes.

Central and State Level Governments

India's decentralised federal structure remains a site of keen contests. While states are able to make autonomous decisions regarding their own development, they are often unable to finance them as the Central government bears significant financial powers over the state government. Furthermore, there has been a decline in the capacity of the states to finance

their own revenue and capital expenditure and thus there are continuing contestations between the states and the Centre around fiscal transfers, regional development and resource allocation. The shift to GST and VAT is likely to alter the power of the states and the balance of power between these two levels of government will continue to strongly impact any transformation agenda.

Local Government

The 73rd and 74th Constitutional Amendments passed in the 1990s provide for decentralisation and devolution of powers to third tier of government to enable better decision making and local control. The emergence of Panchayati Raj Institutions (PRIs) under the 73rd amendment has been much more significant than any implementation of the 74th Amendment in urban areas, which have still to see the emergence of empowered and institutionally strong urban government. Both the 73rd and 74th Amendment were resisted by state governments, and have not taken off due to lack of political will and existing structural limitations.

The purported advantages of democratic decentralisation are: the business of government becomes more transparent; information flows improve, absenteeism of teachers and health workers declines; increases political participation takes place; associational activities increase; the capacity of government to integrate both horizontally and vertically is strengthened, and opportunities for local residents to participate in politics and governance are increased (Manor, 2010). Thus, as more and more cities/districts decentralise, local governments increasingly become agents and sites of change.

Fiscal devolution is a significant part of the creation of a new locus of power at this tier of government. The JNNURM – one of the largest urban renewal programmes in the world – targets local and municipal government and allows them to directly get funds from the Centre, often bypassing governments at the state level. Other measures that financially empower local governments will change intra-state relations, especially as urban areas grow in terms of economic and demographic power.

A New Cadre of Regulatory Institutions

Given the restructuring of the previously public sector economy, new forms of delivery of services, as well as decentralisation, non-state actors are increasingly taking on functions and organisations that were previously within the State's domain. This will imply that independent regulatory authorities will be established and strengthened, possibly at a rapid rate. In addition to existing independent regulators (e.g DERC for power in Delhi), there are calls for independent regulatory authorities for higher education (NCHER), TV content, telecommunication, water distribution, to name a few. These regulators are likely to play a growing and key role in quality and pricing within key sectors, and will emerge at local, state and central levels of government.

Judiciary

India's judiciary, despites its weaknesses around timely and accessible justice, is widely regarded as a strong, robust, and autonomous institution with significant independence from the executive. In recent years, the Judiciary has repeatedly given decisions with significant governance implications, ranging from demanding that the Executive perform certain governance functions to adjudicating on the use and allocation of resources, particularly relating to cases that involved trade-offs between environment and development. In urban areas, significant decisions regarding investment, land use and planning have consistently

emerged from the Courts as opposed to the local governmental authorities (Ghertner, 2009; Bhan, 2009; Ramanthan, 2006).

This emergence of what is being called a "judicial governance" has been seen as overreach, turf wars with the Executive and also as "judicial activism" but regardless of how it is perceived, cases involving public interest, governance and policy are increasingly being determined by juridical intervention, once again muddying the waters between the Judiciary and Executive as internally-conflicted actors within the State.

2. The Private Sector

India's private sector space is highly differentiated and powerful. Globalisation, global competition and growth have facilitated a more intimate relationship between the State and the market. Private sector and the State have an increasingly symbiotic relationship: the government seeks policy inputs from business when making policy on international trade, and the private sector increasingly sees policy and governance, particularly around infrastructure and regulation, as key sites of engagement.

Post-independence, the Indian government created an economic policy framework that curbed the ability of business groups to concentrate economic power and wealth. In 1991, economic reforms removed such barriers for business growth. Large companies such as Reliance, Tata and Birla that have cemented their positions at the top dominate the current business space, although intense competition between them remains. In recent years, smaller groups and new companies, particularly in the IT and telecommunications sector have found their way into the top 20 companies in the country, signalling an emerging role for new entrepreneurs. Increasing diversification and the emergence of younger and leaner firms will continue to diversify the private sector and reduce the concentration of power within a few family-centred firms.

Medium, Small and Micro Enterprises (MSMEs), contribute to 8 percent, 45 percent and 40 percent of India's GDP, manufactured output, and exports respectively. The 2001 census estimated there to be 26 million MSMEs employing 60 million persons (MMSME, 2010). Given that MSMEs are better dispersed, more labour intensive and that their overall growth is higher than larger industries, they are key agents in achieving inclusive growth and generating livelihoods. Their potential in creating new, more sustainable and more inclusive growth trajectories, however, has been undervalued and under explored.

The private sector has forayed into sectors previously dominated and often solely controlled by the State. For instance, India's oil sector has been and is dominated by state-owned Oil and Natural Gas Corporation (ONGC) but in recent years, the government has moved towards deregulating the hydrocarbons industry and encouraging private sector (both domestic and international) involvement. Private Indian and foreign firms like Reliance and British gas (respectively) have become large players in the industry. Similarly, private sector companies like Hinduja Group and Reliance are beginning to set up power plants all over the country. Moreover, as part of the strategy to attract foreign investors, India has created unprecedented licenses for exploration and drilling that permits foreign companies to hold 100 percent equity ownership of oil and gas projects and allows 100 percent FDI within the renewables space (EIA, 2008).

On a smaller scale, higher education institutions have been increasingly collaborating with foreign education providers through twinning, franchisee, joint provision and link programmes. 143 Indian institutes have collaborated with 161 foreign education providers to deliver 641 programmes across the country. These collaborations are highly concentrated in Maharashtra (17 percent), Delhi (15 percent) and Tamil Nadu (15 percent). A large number

of these collaborations are taking place between private educational institutes. Only 3 state universities and 4 deemed universities are collaborating with foreign providers (UKIERI, 2008). If the cabinet-approved Foreign Educational Institutions bill is passed by Parliament, a large number of foreign education institutions could occupy the education landscape and potentially transform higher education and highly-skilled labour generation within India.

Not surprisingly, India's large and growing market potential has attracted a number of multinational companies such as IBM, Microsoft, Coke, Pfizer, Novartis, and Nokia. More importantly, the last decade has seen the growth of Indian trans-national corporations. Companies such as Birla, Reliance, and Videocon have been increasing their international presence especially in Europe and Africa. There have also been a number of recent acquisitions by Indian companies, such as Tata purchasing Jaguar and Corus steel, and Bharti Airtel purchasing Zain Telecom. The number and share of such multinationals and trans-nationals is likely to grow, although whether they will dominate the Indian and global economic space, remains to be seen.

3. Civil Society

Indian civil society, comprising of NGOs, CBOs, social movements, labour unions and press/media is diverse, powerful and exists at multiple scales.

Non-Governmental Organisations

NGOs have always played a dominant and cooperative role in India's development, but their share and influence has significantly increased with integration into global funding flows and a more welcoming political and social landscape for non-state institutions and actors. The rise of NGOs has greatly been facilitated by the state as they have been recognised and increasingly funded by both the central and state governments. NGOs inhabit a broad spectrum of functions: from being watchdogs and rights-based advocacy spaces, to those that assist in service delivery and are increasingly being called upon to do the latter with support from the government.

This trend began with the Planning Commission's VIIth plan, which suggested a shift to NGO to deliver services as they were assumed to be closer to communities. Many have argued, in fact, that NGOs are replacing the state in building, managing and operating its social functions. For instance, state governments have developed partnerships with NGOS such as SEWA to operate Anganwaadis for children in certain localities in Gujarat, and other NGOs have been tasked with solid waste management within communities. Increasingly, however, there have been contestations between NGOs and PRIs for funding e.g. in the national rural health mission. Simultaneously, the RBI's FCRA restrictions have tightened, thus restricting the access to foreign aid and narrowing the space for NGOs in service delivery.

It is impossible to characterise the internal diversity, scale and work profiles of all in the 'non-governmental sector' yet it is clear that from the smallest community level organisation to the large, multi-sited and funded NGO, these institutions are critically shaping the country at all scales.

Social Movements

India has a long and robust tradition of strong social movements that have been and continue to be game changers on multiple fronts, exemplified by examples as diverse as the Chipko movement, the women's movements, the movement for new states like Jharkhand and the anti-displacement movements like Narmada Bachao Andolan. Unlike NGOs, social movements have just as frequently taken on and challenged the state – especially in instance

of rights violations or failures in social and human development – as they have worked alongside it to further shared goals.

In recent years many of these social movements have developed larger global networks and alliances. Some of them have become somewhat 'institutionalised' through NGOs who support rights based campaigns. For instance, the 'Wada na Todo Abhiyan' brings together 3000 NGOs in order to hold the state accountable for adhering to the Millenium Development Goals (Baviskar, 2010). Similarly, since the 1990s, some social movements have also created alliances with political parties e.g. Ram Janmabhoomi movement and the BJP.

Not surprisingly, farmers' movements have arisen as the shift in state policy from redistribution and equity to rapid agricultural growth took place. Initially, these movements were anti-feudal, led by the Left and split between small farmers and rich capitalist farmers who created autonomous farmers' organisations to pressure the State to introduce favourable policies. This split has been exacerbated post-1991, as market oriented big farmer associations such as the Shetkari Sangathan and Karnataka State Farmers' Association (KRRS) have supported agrarian policies and small farmers have been unable to organise themselves to the same degree. Large-scale farmers, particularly in Maharashtra, Andhra Pradesh and Karnataka have supported large-scale agriculture and export-oriented policies. The farmer lobby in India has historically been and continues to be a powerful one. With the deepening of economic reform and the increasing marginalisation of small farmers, movements by small farmers have begun to and are bound to intensify.

The most significant recent example of social movements impacting governance is the Right to Information. Now a national legislation called the Right to Information Act that allows all citizens timely access to information from public agencies and officials, RTI began as a movement to democratise governance through access to the accounts of agencies distributing food through the Public Distribution System (PDS) in rural Rajasthan before growing to a national movement, eventually changing policy and systems across the country.

Elite Civil Society Groups

Civil society organisation has, however, not been limited to movements asking for greater equity and inclusion, as is often perceived. Demands for good governance have risen from non-poor civil society groups just as powerfully, particularly in urban areas with the rise of power corporate and private interest groups and lobbying organisations, as well as Resident Welfare Associations (RWAs). With disproportionate access to resources and a proximity to government and the State, these non-poor associations have become significant actors in formulating even social policy as well as shaping spatial, political and economic governance in cities. This has been done through influence, participation in public-private fora like commissions and advisory boards and also by direct devolution of governance functions by local government in the case of RWAs.

Labour Unions

Although relatively small in size, with only 24 million members, labour unions (which operate through different political parties) have been extremely powerful in India. For instance, trade unions have managed to establish legal regimes whereby employers cannot retrench workers without prior permissions of the Government. While this protects workers, it makes it impossible for industrial firms to respond to technological changes or the market. Unions remain strong sites of contest and power in the public sector, but their influence has been waning in the recent decades partly because of the changing political economy of public sector institutions. Divides between formal and informal workers remain, and the inability of unions to reach out to unorganised workers has significantly weakened their demographic

reach and base. Unions have also increasingly lost political empathy and patronage with multiple sections of society, and need to find new articulations of their demands to both expand their membership and be politically effective in a new economic climate.

Media

India is the second largest market in the world for newspapers, consuming close to a 100 million newspaper copies. It also has nearly 1400 TV broadcasting stations both in English and in indigenous languages. Global media giants have been slowly increasing their stake within the Indian market. The last three years have seen US$88 million in FDI, as the government allows 20 percent FDI in FM Radio, with the requirement that editorial management must remain Indian. In recent years there has been centralisation of ownership of this media but a robust and somewhat critical free press remains. The Indian language press has seen significant growth and impact in the last decade, often through alliances with political parties. The challenge ahead is to truly democratise and expand access to media and support media in Indian languages.

4. Community

Central to the idea of India's survival is the notion of plurality and difference. As a multi-religious, linguistic, and ethnic nation, India has in its young history, been fraught with debates concerning itself and its people. It managed its linguistic diversity by fragmenting its states according to language though those boundaries continue to be contested for myriad reasons. Issues of religious and other minorities continue to be much fought over. Increasingly, in recent memory, there is a paucity of genuine public spaces for dissent and dialogue over the fundamental shared values of a secular, tolerant republic, resulting in increasing polarisation along strictly defined lines of collective identity. The reactions of 'tradition' against modernity reflects a genuine need for increasing access to marginalised groups who are otherwise left out of the developmental discourse in multiple ways. This has resulted in the organisation of communities along the lines of caste, religion and language, and these communities are powerful political and economic actors.

Faith-based Groups and Leadership

Though clear leadership and institutional actors are hard to identify across faith, faith-based leaders and actors wield significant power in everyday political life as well as within Political Institutions at the more macro-level. With the electoral victory of the centre-right Bharatiya Janta Party (BJP) in the 1990s, Hindu fundamentalism and a shift to the right was given a strong fillip with mainstream legitimacy being conferred upon an agenda of "Hindutva" that sought to recreate and reclaim India has a "Hindu" space and culture. The demolition of the Babri Masjid in 1992 and state-sponsored violence in Gujarat in 2002 were the worst communal violence and breaks in the country's secular fabric that India had seen for some time. The voice of the Hindu Right remains strong despite the BJP's subsequent loss of power at the Centre and significantly shapes Indian politics.

Muslims in India have, in a sense, a crisis of internal and external political representation. With few key leaders at the national level [outside Kashmir] that represent the community, Muslims arguably have an absence of senior political leadership at the state or national level. Even organisations like the All India Muslim Personal Law Board, one of the most visible Muslim institutions nationally, has a contested representation of the community. Minority religious institutions like the Aligarh Muslim University have failed in their mandate to create a national political and cultural space that represents Muslim interests, though Jamia Millia Islamia in Delhi perhaps has been more effective. This vacuum in progressive Muslim institutions has led to a significant importance to more religious actors, from madrasas to

religious clerics and seminaries such as those at Deoband. From Shah Bano onwards, the fierce protection of Muslim customary and family law has been a source of some conflict and the battle lines drawn then continue to shape social transformation within the Muslim community. As demands for quotas for Muslims grow stronger in some states, new institutions and political equations, however, might emerge.

The Sikhs, in contrast, have a strong territorial, economic and political presence, and the resolution of the Punjab question in the 1980s was a significant step towards integration though the lack of justice after the 1984 Sikh riots in Delhi remains a cultural and political source of tension. Regional political parties like the Akali Dal in Punjab have strong representation at the Centre and political voice that is supported by the economic power of the largely affluent Sikh business and agricultural communities.

In the absence of a uniform civil code, divisions of "community" or private life and public life continue to resurface periodically, around political questions of marriage, family, and violence. Resolution of these tensions while pacifying both religious leaders while not allowing "community" to become a shield against all democratic and constitutional accountability, remain concerns. Social transformation of any kind will have to engage with religious leaders across the board, and the terms of that engagement are far from clear.

Caste-based Institutions and Actors

Caste remains a significant determinant for everyday and institutional political life in India. While lower caste leaders have increasingly ascended to the highest rungs of national political power, caste remains a significant deterrent to inclusion in everyday life. Mobilising around caste electorally, however, has long been a facet of Indian politics and the emergence of caste-based regional parties has strengthened and segmented vote banks further and created incentives to protect and retain caste divisions.

Reservation and positive discrimination measures also continue to dominate the state's developmental strategy when it comes to caste and this also complicates any attempts to transform caste-based social structures.

Caste-based groups have continued to fight for autonomy for their cultures, customs and traditions, and many social and legal transformation agendas remain stalled because of the resistance of caste leadership. The caste question is relevant in both rural and urban areas, though possibly more institutionalised and organised in the former than the latter.

Language

The linguistic organisation of states in the early stages of the republic was the first concession made to the linguistic diversity and the intimate relationship of language and identity in India. Language is one of the key political battlegrounds between the Centre and state governments, amongst communities and across class, with access to English being the defining debate and issue.

Language-based identity, however, has increasingly been mobilised by a range of actors from state governments to faith-based groups as an intrinsic part of identity and thereby another possible axis of exclusion.

5. Armed Resistance and Regional Separatist Campaigns

One of the most critical contemporary actors that India will have to deal with is the rise of armed resistance by 'Naxal' or 'Maoist' groups in states across the country though particularly centred in Chattisgarh, Orissa, Andhra Pradesh and West Bengal. Adding on-

going separatist and conflicted situations in Kashmir and many states in the Northeast, separatist and anti-state movements, are actors that critically shape even access to regions and the ability to govern in many cases. The uncertain and divided response to the Maoists by the state has also indicated the difficulty in finding a clear path and line of response to armed insurgence.

6. Academic Institutions

A somewhat neglected though no less significant constituency, is academia. Education has been in the forefront of the welfare state's agenda, with mixed success. Much has been recently written about the role of education in preparing the country for the new 'knowledge economy' and 'knowledge society'. What is somewhat understated however is the relatively low status of teachers and in turn, the pre-eminently 'silent' role played by teachers in not just moulding the next generation of skilled people, but also in determining the very contours of social change. This relates to the very constituent and instrumental significance of education itself in contributing to national and more broadly, humanity's welfare. At the foundation, the right to education which will kindle the first flames of imagination and inspiration in the millions of the country's children, will require an enormous increase in the number of primary school teachers. Dearth of quality faculty remains a critical binding constraint in India's vision to universalise primary and secondary education, and severely impedes the delivery of quality higher education. At the University and deeper research levels, the intensity, scope and quality of innovation, depends directly on the quality and numbers of academia.

Academic institutions, think tanks, policy bodies and intellectuals have historically played a significant role in the shaping of liberal democratic institutions, including contours of State policy. Critical here, is the need for academic autonomy, free of the inherent pressures of the State and the market. There has been a steady erosion of intellectual autonomy in India over the last few decades with severely dangerous implications on the nature of the country's institutions and socio political cultures. Edward Said's role of intellectuals speaking 'truth to power' could not have a more salient area and time.

VII. ENABLING INDIA'S URBAN TRANSFORMATION (2000-2050)

India may have reached a position in its current development trajectory in which steady 7 percent plus growth may be possible to maintain for the next few decades, except for global shocks like the current economic downturn. This would however, depend on continuing regional stability, the stability of global economic growth, the absence of significant external shocks, no further increase in domestic inequality or a decline in internal governance (Baru, 2006, Wilson & Purushothaman, 2003, McKinsey & Co, 2001).

Part of these changes will be driven by high (30 percent plus) rates of savings and investment; strong domestic demand; increasing export competitiveness in some sectors; the slow release in constraints in the infrastructure and public services sectors, governance and public service reform in some states and the new confidence of a post-liberalisation generation entering the workforce which, if coordinated effectively, could lead to an accelerated transformation of India's cities, urban areas and villages. (de Vries and Revi, 2007).

This implies that India's future GDP could double each decade and if inflation is kept in check, real per capita incomes could double every twenty-five years. The changing structure of the national economy implies that much of this incremental growth is expected to come from urban and peri-urban areas. This would transform India's landscape of production, consumption and citizen expectations and slowly shift its historic centre of gravity from rural to urban areas if significant changes are not rapidly put into place. It could, however, create an extreme dystopia: the largest population of poor people in urban areas in human history enmeshed in social conflict and potential asymmetric violence. (Revi, 2006).

This passage is expected to be stormy and hotly contested, and needs to be addressed appropriately by deepening democracy, keeping social and environmental costs and externalities within check and protecting the commons and the common good. Channelling the creative energies of an increasingly youthful population into productive entrepreneurship and social transformation will be crucial. Else a spiralling down into asymmetric violence – driven by deprivation, social and economic exclusion and a suppressed space for plural identities – will start to haunt many less developed regions and Indian cities.

India's rapid economic and urban growth will not come without considerable economic, social, political and environmental costs, accentuated by historical asymmetries of caste, gender, education, region and minority status. Growth therefore, has to be more than just inclusive. It has to hold out a real promise guaranteed by the Indian Constitution of transformation of living and working conditions; universal access to public services, health, education and housing; effective and equitable systems of governance, and justice for all citizens, in a generation or less.

If this Constitutional settlement and social compact is not met, India does not have to look far to see the face of her future: the fate of a number of adjoining failing States. The cushion of tradition, dispersion, disconnectedness, ignorance and faith will be less available to the Indian State and elite in the next few decades (than over the last 60 years) as universal elementary and secondary education, increasing connectedness brought by the telecommunications and Internet revolutions and greater political consciousness of excluded communities and groups, change the rules of economic and political engagement.

More instrumentally, both income and employment growth could be considerably constrained if the current decrepit state of infrastructure and public services and the built

environment in most of our 5,000-odd current urban places, 10 to 15,000 emergent urban centres and over 0.6 million villages is not expeditiously addressed.

1. Human Settlements Education: A Prime Need

Ironically, the fundamental constraint to the orderly, equitable and sustainable growth and transformation of India's urban settlements is not capital nor, perhaps, political competence, but the availability of sufficient numbers of well educated professionals, entrepreneurs and changemakers committed to the common good.

Unfortunately, India's higher education system has no professional programme built around interdisciplinary skills (straddling engineering, architecture, urban design, planning, ecology, economics, politics, law, the arts and the other social sciences) or scale of learners necessary for the satisfactory development, management and governance of India's 5,000-odd cities and towns and 0.6 million villages.

India's existing schools of urban planning and design deliver curricula developed in the 1970s and1980s. They are unable to address the need to transact an integrated 21st century curriculum that needs to straddle technology, social sciences and management sciences to respond to the dramatic changes in society, the economy, technology and the environment that we expect to see. As a result, thousands of young professionals are streaming to the US, Europe and Australia for an education each year, accompanied by an outflow of $ 2-4 billion. Simultaneously domestic services, construction and infrastructure markets are being filled by firms and workers from East and South East Asia, in spite of huge unfulfilled domestic livelihood demand.

Well over 40,000 habitat-related professionals a year will be needed to be educated over the next two decades via a mix of undergraduate and graduate degree programmes, distance learning and in-service training to fill a yawning human resource gap in India's municipalities, planning and development authorities, urban utilities, private and public infrastructure organisations, design firms, social enterprises and real estate companies. The IIHS seeks to fill a significant fraction of this demand, as it scales outward from an initial urban campus.

As Indian industry and leading global Universities are discovering, the central challenge is not only of numbers of learners and educators, but that of delivering relevant quality interdisciplinary education. This will not be easy, as habitat-related programmes - even in the top Universities - lag behind cutting-edge praxis, sometimes by more than a decade.

The challenge is of balancing the need for the education and training of tens of thousands of learners and young professionals with a rapid rise in the quality of their education (to boost employability in a globalising economy) via an integrated interdisciplinary programme that provides a strong foundation for life-long learning.

2. Strategic Challenges facing Human Settlements Education & Innovation in India

The key strategic challenges facing Habitat and human settlements education and innovation in India are:

- An immense unfulfilled demand for Habitat-related professionals, in spite of both a willingness to pay for quality education, and huge unfulfilled opportunities in the relevant livelihoods market. At the upper end of the price-spectrum, this is being filled by foreign Universities at an order of magnitude higher price than domestic institutions.

- Private firms seeking to address the exploding demand for urban and infrastructure development, real estate and even SEZs that find quality human resources a severe constraint. This gap is being filled by foreign firms with better-trained professionals, processes, higher quality and management capacities.

- This huge talent deficit is an important structural constraint to urban reform and improved infrastructure and public service provision. This could have a major impact on India's future economic growth trajectory.

- State-sponsored educational institutions have proved unable to fill this gap, even if they are provided the resources. This is because they provide inappropriate incentives to quality and performance to draw the best talent in the country (far from across the world); are highly discipline-centred; often out of touch with real-world practice, very far from best practices; and have little engagement with economics, finance, other social sciences and governance, which are essential to contemporary habitat-related problem solving.

- Existing privately funded programmes do not provide a deep enough interdisciplinary education required to engage with emerging habitat and governance challenges, both in terms of quality and numbers. Where they exist, such programmes are not designed to scale and are sub-critical in terms of faculty size.

- None of these public and private institutions are designed - or aspire - to reach out proactively beyond their limited constituencies, become more inclusive by drawing in learners from across the country and move up the value chain in terms of original research and knowledge generation.

The IIHS is designed to address these core challenges and other regulatory and institutional constraints that pepper the Indian landscape. It is expected to be structured as an independent National University, transacting a multilingual curriculum across national jurisdiction via multiple campuses and a network of academic and practice partners.

3. The Role of Independent Educational Institutions

The inadequacy of only around 367 Universities for a country of India's size and population in the face of incipient universalisation of secondary school education is striking. Due to regulation induced supply constraints, India's Gross Enrolment Ratio (GER) for higher education, among the 18-24 age cohort hovers at an abysmal 10 percent: below many developing countries and way below the OECD nations.

India's XI Five Year Plan does allocate larger resources to education. In particular, as a response to the challenge of rapidly expanding demand for education, there have been recent attempts to establish new government-funded and controlled institutions of excellence, such as the two new Schools of Planning and Architecture (SPA), four new IITs and six new IIMs.

However, if India's GER has to increase to about 20 percent by 2015, it will also require large private investments in the sector, as well as structural innovations in existing institutions along with new delivery methods, that can respond to the massive expansion in effective demand and the opportunities offered by new technologies.

4. Rationale for an independent National University

The search for balanced representation of the India's key stakeholders – corporations, high net worth individuals, state and central government, civil society organisations, like-minded universities and think-tanks - in supporting and financing the IIHS goes beyond the need to find suitable livelihoods for its students or maintaining close links between research and praxis. It lies at the heart of an attempt to build a strong knowledge partnership between the private, state and civil society sectors to address crucial emerging issues before the country.

It is this form of partnership (centred in universities such as MIT, Stanford, Harvard and Caltech) before and after World War II that enabled the US to become the world's leading innovator and dominant economic power. China is set to emulate this rise, and is investing billions of dollars in this direction, primarily via state-led initiatives whose effectiveness is unclear (Leadbeater and Wilsdon, 2007).

In a country like India where public philanthropy and alumni contribution to educational institutions is weak, State support would have seemed the most appropriate way forward. The Japanese and South Korean states invested furiously in their public university systems during their burst of institution building after the Meiji restoration in the 1880s and after the Korean War in the 1960s and 1970s (Webb, 2007). The Chinese government is attempting a similar transformation of higher education, research and its national innovation system that will have a huge bearing on India's economic future and that of its corporations as competition devolves to the city level in a networked world. (Khanna, 2007, Leadbeater and Wilisdon, 2007, Dahlman, 2005, Castells, 2000).

The Indian State's record of higher education institution building, delivery and innovation - after an early Nehruvian emphasis in the 1950s - has been abysmal and often retrograde, especially since the effective rejection of the Kothari Commission's recommendations in 1968 (GoI, 1968, Ghosh, 2007). The mal-regulation of this sector, which has neither been able to achieve significant gains in terms of equity and access nor excellence, is now becoming a strategic impediment to both social transformation and economic change. It is time that a new generation of accessible equity-focused and excellence oriented institutions were created and nurtured, outside India's state system. (Mehta, 2008)

The effectiveness of Anglo-Saxon private universities and the State-funded research that links them to their national innovation systems, points to an opportunity of building a new generation of independently funded Indian Universities (Revi, 2007, Bound, 2007). These unlike most in the West, would need to be inclusive mass institutions that act in the common good and build a plural body of India-relevant knowledge and experience. Many Indian National Universities of the pre-Independence period were fuelled by a similar vision (in a very different context) and funded by wealthy individuals and the private sector, e.g., Aligarh Muslim University, Shantiniketan, the Indian Institute of Science. (Ghosh, 2007; Revi, 2007).

The diversity of India implies that unlike the Japanese, Soviet and the Chinese educational experiments, these institutions are best constructed not as place-based centralising institutions enforcing a single national ethos or set of languages, but rather as a networked institution that draws upon a common pool of generalisable knowledge grounded in the reality of particular regions, cultures and languages (Castells, 2000). A semi-open architecture will enable the IIHS to be open to knowledge and innovation from across the globe and specifically all corners of South Asia as long as it is relevant to our context and the *glocal* challenges of simultaneously shifting scapes (Appadurai, 2002).

India has less than two decades to enable a cluster of such institutions to be created, if it has any hope of 'catching-up' with the rest of Asia and providing a half-decent life to its citizens. The IITs, the IIMs and the IISERs and many new Central and State universities that have been announced will continue to be important to building and deepening India's knowledge systems, but they are insufficient to address the fundamental challenge of integration, interdisciplinary and operational relevance to the social, economic and political transformational agenda that India faces. (Revi, 2007, Bound, 2007).

It is this agenda that the IIHS seeks to squarely face up to: the traverse between praxis and theory building; the integrative terrain between disciplines that could help redefine the entitlements, lives and living conditions of hundreds of millions of ordinary people; a serious engagement with the diversity of languages, cultures and discourse across India; the contested landscape between villages, urban areas and megacities; communities, the State, private enterprise and the faith traditions.

It will however, attempt to do this in concrete rather than only abstract ways, by developing a wide and deep cadre of human settlements professionals, urban stewards, designers, innovators and managers. For, cities and human settlements, like people and cultures, need to be given form to, nurtured, developed, and renewed over their long-life cycles.

5. Negotiating India's Higher Education Regulatory Maze

The regulatory environment has a significant bearing on the three primary contemporary challenges to India's higher education: expansion, excellence and equity. Achieving them simultaneously is the key to fulfilling India's demographic dividend and the transition towards inclusive development and a globally competitive domestic knowledge economy.

The primary challenge before the IIHS is neither articulating a vision, developing an interdisciplinary curriculum nor mobilising a significant volume of resources to establish a national University: it is in successfully negotiating India's higher education sector's regulatory maze.

India's contemporary higher education regulatory environment is complex, contested and mal-regulated (NKC, 2009). It is not inconceivable that institutional reform will come to this sector, as others, over the next few years. Nevertheless, the IIHS will need to pragmatically negotiate these multiple constraints in a strategic manner, without compromising its mission or values.

The higher education system in India has an accretionary structure, with little or no housekeeping having been undertaken for half a century. Institutions of higher education include Universities[3] (central and State, funded by the government; along with an increasing number of unaided private Universities), technical institutions (which deliver engineering, technology, management, architecture, town planning, applied arts and crafts, pharmacy

[3] According to rough estimates, there are about 216 State Universities, 20 central Universities (and 15 new central Universities have been created by a recent ordinance), 101 deemed Universities, 5 institutions of national importance and 18,064 colleges. However, according to Planning Commission sources, till 2004-05, there were about 367 Universities. While the number of Universities had increased from 27 in 1950-51 to only 367 in 2004-05 and that of colleges from 370 to only 18,064, the University and higher education enrolment has gone up from 2.6 lacs in 1951 to 112 lacs in 2004-05. Thus, the growth of educational institutions and infrastructure has not kept pace with the growth of enrolments.

education) as well as other professional institutions imparting education in areas such as law and medicine.

The sector is mired in overlaps and jurisdictional conflict between multiple bureaucratic authorities, each attempting to strengthen their vice-like iron grip on the sector. The UGC governs Universities; the AICTE is in charge of technical institutions; and respective statutory bodies control professional education (e.g. Council of Architecture, Bar Council of India, Medical Council of India), with some overlap and occasionally, conflict in some areas with the AICTE. In addition, the Distance Education Council (DEC), though not a statutory body, controls distance education in India, under the aegis of the IGNOU Act.

There are high barriers of entry for new institutions into the higher education space. If proposed UGC Regulations for Deemed Universities (2009) come into force, they will be raised even higher. The current UPA government appears committed to significant structural reform in the sector, an unbundling and a partial deregulation. This could create a number of niche opportunities for the IIHS to create an institutional space to enable its mission but would require both strategic intervention and timing.

6. The Way forward for the IIHS

The IIHS in theory could be established as a:

- State University via a State legislation
- A deemed University under s. 3 of the University Grants Commission Act
- One of the 16 National Innovation Universities proposed to be established by the Government of India
- A National University via a special Act of Parliament

India is currently going through a process of extensive reform and deregulation of its Higher Education sector. This has opened up a number of institutional options for the IIHS to implement its transformational agenda.

There are five basic principles that ideally define IIHS's engagement with this changing institutional and regulatory environment:

- Autonomous but engaged with government
- University with national jurisdiction
- Regulatory accommodation
- Hiring and Compensation flexibility
- Financial and Resource incentives

In keeping with these principles, the IIHS is expected to be established by an Act of the Indian Parliament as an independent University with national jurisdiction. No other institutional arrangement would be able to facilitate its aspirations of national scale, globally-ranked excellence and inclusion.

7. The IIHS Vision & Mission

- Building an inclusive world-class interdisciplinary knowledge-based institution and an incubator of knowledge-based innovation and economic and social enterprise of appropriate scale with the:
- Technical *capacity to design, develop and help deploy* the most appropriate *technologies, infrastructure and management systems* from across the globe

- Institutional *capacity to incubate and catalyse technical, institutional and social innovation, sustainability* and *enable good governance*
- *Epistemological capacity* to effectively respond to contemporary and emerging challenges drawing on both disciplinary and indigenous knowledge
- Ability to build an *international quality faculty* of academics and practitioners into a team *focused on* the social, institutional, economic and environmental *transformation of Indian urban areas and rural settlements*
- *Ability to build strong partnerships* with other Indian and global design, planning, technology, social science, governance and public service delivery institutions
- *Inclusiveness* to provide appropriate space for education, professional and skill development to deserving learners committed to excellence irrespective of economic and social status, gender, age, or disability
- Ability to serve as a *neutral platform for dialogue* between the state, private and civil society sectors and citizens, especially the most vulnerable
- *Potential to be rooted in South Asian culture*, arts and craft, languages and scholarship and thereby set global standards for education, research, advisory services and training using a mix of media, pedagogical and participative methods

This will be undertaken by:

- Assembling the best practitioners and academics from a variety of disciplines and to bring their abilities to bear on understanding the challenges and opportunities related to human societies and settlements in India and abroad, with an emphasis on integrated, inter-disciplinary and trans-disciplinary approaches.
- Educating willing learners drawn from diverse social backgrounds and providing them with understanding, perspectives and knowledge as also the technical, managerial and inter-personal skills needed to enable greater equity, an improvement in the quality of life in and the sustainability of human settlements
- Creating a body of knowledge and praxis to address the entire range of challenges with which human settlements in South Asia are confronted, and a set of possible solutions and disseminating this as widely as possible
- Developing higher and other education programmes; providing continuing education and in-service training; conducting research and development and providing design, consultancy and advisory services to further these aims

8. Core Value Proposition

The core value proposition of the IIHS is that it seeks to break through the current impasse in habitat and human-settlements related higher education, in a generation by:

- Creating a independent National University of world-class quality and scale enough to engage substantially with the realities of Indian settlements
- Being highly inclusive in terms of entrants by keeping fees at par with subsidised publicly funded public institutions like the IITs and IIMs
- Scaling to address the learning, design, advisory and change management needs of public, private and social sector institutions across the country
- Becoming revenue positive within the first 6 to 8 years of functioning by using an innovative hybrid institutional design and revenue model.

Meeting this diverse set of constraints will require:

- A *globally hired core faculty* of *exceptional quality and standing* that is *compensated at international levels*
- A *globally-benchmarked curriculum* developed specially to address Indian needs, based initially on standards such as MIT's OCW, and in time, a large volume of original research
- Attracting the *best students from India* (and abroad) irrespective of rural or urban background, gender, economic or social status, language or disability
- A *world class campus and infrastructure*, that sets global standards for sustainable design, operations and maintenance
- A *small corporate management team* that enables the most effective mobilisation and use of resources and mission accomplishment

9. The Student Body: Developing Entrepreneurs & Change Agents

The objective is to produce problem solvers and innovators with a diverse set of entrepreneurial skills who would help to change the face of urbanisation in South Asia. IIHS learners are expected to find employment in:

- **Private Sector Enterprises:** housing, construction, infrastructure, utility, real estate, finance and advisory services, consultancies;

- **Public Sector Enterprises**: Municipalities and Urban Local Bodies, State and National governments, regulators, public utilities and enterprises;

- **Civil Society Organisations:** organisations working on community issues, mobilising collective action, enabling the common good and social inclusion;

- **Universities and Knowledge Enterprises**: institutions creating South Asia-centric and globally relevant knowledge on human settlements, governance, technology and the environmental and social sciences.

10. Programme Structure

IIHS will become an independent National University, running the following programmes:

- A globally benchmarked two-year Graduate and four-year Undergraduate interdisciplinary Degree Programme**.** It will be built around a set of 18 disciplines and practice areas identified as central to human settlement growth and transformation in South Asia.
- *Design Professions:* Planning; Architecture; Design; Technology (with a focus on the Engineering arts and application)
- *Management, Social Development & Governance Professions:* Management; Public Policy; Law & Governance and Social Work
- *Social Sciences, the Fine Arts and Media:* Economics, Geography, Political Science, History, Sociology and the Fine Arts and Media
- A preparatory programme for disadvantaged learners to enter the IIHS
- A bridge programme to enable lateral entry from other programmes
- A doctoral and research programme that would help create a corpus of India-centric and relevant knowledge in its multiple areas of focus

- A Distance, e-learning and mobile-learning programme, providing learning opportunities in multiple regional languages to early and mid-career professionals and stream-shifting students
- An Executive Education programme, catering to the training and development needs of public, private and civil society institutions.
- A Design and a Consultancy programme, providing urban and infrastructure development, real estate, project management and public policy advisory services to public and civil society institutions and private developers.
- An action-oriented Research and Knowledge Generation programme that is closely tied to the academic, advocacy and consultancy programmes.

VIII. CONCLUSION

This document has presented a working draft of a visioning exercise, one that seeks to imagine not just an India as it could be in 2030 but also what it would take from today's India to get there. The Vision centres around five key meta-outcomes that centre around the new 'projects' of national importance, each and all concerned with the need to end abject poverty, enable social transformation, and maintain the integrity of India's polity, economy, environment and its relations with the world. To these ends, it has suggested sixteen 'Arenas of Engagement' – key domains within which the work of transformation must actually occur. These arenas are defined by both a set of opportunities that must be harnessed and directed as well as structural constraints and that must be overcome.

The Vision suggests that India's forthcoming urban transformation provides a window of opportunity to coalesce multiple change processes to achieve these outcomes. The massive momentum of South Asian urbanisation will provide a powerful opportunity to explore alternatives to the 'standard' OECD model of development that many countries, including China, appear to be moving towards. It further hypothesises that the urban transformation that will work its way across Indian society, economy and culture over the next three to four decades is an integrating theme that will enable a strong engagement towards building a new national project.

This urban transformation, however, needs a deep reform of India's higher education system especially in interdisciplinary education around habitat and human settlements. Such reform would help fill a large human and professional deficit in India across private, public, municipal, panchayat and civil society institutions to enable these prospective opportunities to become a reality. It could do so by creating meaningful livelihoods for a large number of younger people and mid-career professionals via multilingual learning environments, enabling them to become entrepreneurs, innovators and changemakers who would seed and maintain the momentum behind these everyday changes.

The development of a cadre of entrepreneurs, innovators and change agents, trained using an interdisciplinary curriculum that addresses the full complexity of these challenges is a powerful way to prepare for the future at a scale, to excellence and inclusion that will provide India a fighting chance of working its way towards these goals. The IIHS is such a catalytic institution that attempts through the creation of an independent national University, to create the framing conditions for these processes to take root, build partnerships and alliances around, and in time, bear fruit.

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Indian Institute for Human Settlements (IIHS)

The Indian Institute for Human Settlements (IIHS) is a national education institution committed to the equitable, sustainable and efficient transformation of Indian settlements. IIHS aims to establish India's first independently funded and managed National University for Research and Innovation focussed on the multi-sectoral and multidimensional challenges and opportunities of urbanisation. The University is intended to be a globally ranked institution. The IIHS is a proposed network of mother and daughter institutions across South Asia, leveraging on local and regional knowledge and innovation and linking them to global best practices. Its mother campus, based in Bengaluru, will include academic, research and social infrastructure, student and faculty housing. This campus is expected to set international standards for efficient, economic and sustainable design, operations and maintenance.

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