

PROJECT REPORT

Transforming the Development Paradigm

This paper is an attempt to build a narrative for a sustainable, greener, climate resilient development pathway unique for India.

Submitted to

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1. Introduction

With the departure of its colonial rulers in 1947, India regained the opportunity to choose a completely new future for itself. It was even in a good position to pioneer a whole new basis of governance and economic culture and to set an example for the many countries worldwide whose independence from similar foreign rule followed in the subsequent years and decades. What was unique in this opportunity was not just the ability to build a new nation drawing on the best features of its enormously rich cultural and civilisational traditions (and to discard those that were not acceptable in a modern society dedicated to welfare of ALL its citizens, not just the few) but to mesh these with the extraordinary new understanding of our world generated by science during the time these changes were taking place.

Unfortunately, within three decades following independence, it had become clear that these opportunities had been wasted and our new nation had lost its way, much less fulfilled its role as a model for others. By the early 1980s, the brightest young people in India who had the means to do so, were abandoning their country in droves and trans-locating as far away as possible to improve their life prospects. The nation's economy and society were close to breakdown with poverty, corruption, and mal-governance as the major reality and dominant self-image of the country.

A decade later, in the early 1990s, substantial economic reforms were introduced to rescue the nation's economy, which was close to bankruptcy. These certainly gave immediate relief to the national exchequer and, to some extent the national psyche. But they laid the framework of a rapid transition from a dysfunctional 'socialist' economy to a predatory 'neoliberal' economy. From an era when the primary language (though not necessarily action) of public policy was about alleviating poverty (mostly through earmarked government 'schemes'), India suddenly jumped into an era of stock market indexes, measures to raise FDI and deregulation and liberalisation of industry and creating opportunities for a few selected cronies to become obscenely wealthy in extraordinarily short timeframes. As the number of millionaires grew, so did the numbers of the hungry and deprived.

This report is an attempt to analyse what went wrong in these transitions and how they can be put right for the future. Its perspective is universal and its aim is to identify the changes needed to make India a good place for ALL - the poor, the well off and the future generations. It tries to suggest ways by which a more sustainable balance can be achieved among different segments of society and between society and the natural ecosystems that have to subsidise much of the wealth creation process.

It presents a reasoned case for bringing substantial changes in national priorities as a means of bringing the future trajectory of India's economy into line with the imperatives of its social and environmental resources.

2. *Envisioning India in 2047 – 100 years after Independence*

Envision an India of what it can be; an India of what it should be; an India of our collective dreams, aspirations and endeavours - an India that is the sage herself. Let us visualise a land and its people 100 years after they were free to govern themselves and build their own future. Let us imagine an India that nurtures all diversity - biological, socio-cultural, technological, economic and physical - in its cradle and gives to the world the wisdom and direction for what it means to be truly developed and modern.

This is a land where real education unlocks individual human potential and creativity to open thought and responsible action towards co-creating a sustainable future, for the nation and for the world of which it is a part. Where knowledge and wisdom are revered above all and economic transactions generate wealth and value for society as a whole.

This is a realm where governance systems define policies and guidelines for human development within a healthy planet, where national policy is informed by local knowledge and aspirations which in turn are intrinsically rooted and connected to the health of their natural resource base. A land where human fulfilment and happiness drives the economy measured by a well-being indicator and the GDP is a number representing financial transactions contributing to but one aspect of net positive wealth creation for society.

In this India, human endeavour and creativity is valued above all and equality of opportunity to participate in building our collective and individual futures is the right of every single citizen. In this India, the last in our society always comes first and the environment belongs to all. This means that consumption, technology, enterprise, manufacturing and supply are based on the principles of the circular economy. Economic activity is, by intention and design, careful to restore the ecosystems and natural processes that support it – and this, in turn, means that the flows of biological nutrients are designed to return into the biosphere safely, and the flows of technical ‘nutrients’, are designed to circulate at high quality within the technosphere, without entering the biosphere. This is an India where economic systems have moved away from intensive consumption of finite, non-regenerating source materials and fuels as inputs towards the use of resources that are renewable and non-depleting. In such a system, diversity and decentralisation is the key to system resilience.

Today, however, we must critically examine our current systems of governance, industry, education and behaviour to assess whether these can lead us to the India of our dreams. Will the marginalised be able to walk with pride and dignity on that journey? Will the pathways we are following today lead us to the top of the plateau or down the precipice? Will we all have enough to eat and drink as journey or will some of us plunder and loot and then kick away the ladder for the rest? Will our economic vehicle be driven on wheels of equity, human capacity, nature’s bounty and human enterprise, fuelled by green investments and adequate to accommodate all, running at a pace that helps us reach our destination before the road or the fuel runs out?

We would like to think that the destination is real, very real and possible to reach. We just have to replace our engines and change the road we chose. It is however not so simple, as the change may require changing of the drivers - fundamental transformations in our institutional structures, behaviour patterns and indeed value systems. It will need us all to work collectively for a transformative and universal new development agenda for the country. And, in order to develop a common understanding and definition of the required transformations, we will need to galvanise national political will and international co-operation such that each country and each citizen can play a role according to its capacities and relevant to its context for a just and fair transformation.

It will require us to shift from a 'one size fits all' approach to accepting diversity as a necessary condition for sustainability. It will require some to cut back in order that all get the space to achieve fulfilment of basic needs, actualise potential and exist in a safe and secure world. It will require us to shift the direction of our investments to build human capacity, especially focusing on women and youth, regenerate our natural bounties, and into research for the improvement and maintenance of human development and planetary health.

We are, in the words of a present day *rishi*, eternal optimists and *karmayogis*. We are dreamers and we dream BIG with our eyes open, our feet firmly rooted to the ground, our arms stretched wide to receive new ideas and our head held high with dignity of lives well led. And, therefore, in the true spirit of dreamers we design our futures with the future in mind, but as true *karmayogis* we act in collaboration to make that future come true.

2.1 Our Guiding Principles

The successive changes in political and economic ideology in India have led to constantly changing development agendas and priorities in the last six decades. This book starts with a presentation of the five principles - the 'Development Alternatives Panchsheel', which we believe must be satisfied by policies and interventions that are intended to create a sustainable future for India.

In our usage, a 'principle' is a fundamental truth or proposition that serves as the foundation for a system of belief or behaviour or for a chain of reasoning. These five guiding principles have been developed from the learning and experiences of Development Alternatives in its three decades of work - from the literature and from engagement with our local, regional and global partners. Our effort is to stay as true as we can to these principles in all our work and be guided by them in making our contributions to the sustainable economic, social and environmental development of our nation

1. Principle of Universality

Fairness and social justice are bedrock values in all faiths and traditions. Mahatma Gandhi's talisman, which is another way of expressing his concepts of 'antodaya' or 'putting the last first', is an apt description of the ethical basis of a well-functioning, decent, and sustainable society. Commitment to

universality implies inclusion and empowerment of all, particularly those who are marginalised and voiceless. It entails an equitable distribution of economic and natural wealth and an opportunity for all its citizens to pursue better lives and participate in the decisions that affect their lives.

Equity and justice are not simply moral issues: they are a practical societal requirement – a prerequisite for civilisational survival. No society can be good for long - for either the rich or the poor - if the most deprived and marginalised are not living with dignity and fulfilment. An equitable, participatory and a just society are essential for economic progress and vital for the health of the ecological system that supports it.

2. Principle of System Integrity

The principle of system integrity is based on the concept of 'the whole is greater than the sum of its parts'. A critical element of this principle is the requirement to understand how parts of the system influence one another within the whole and how the relationship of the whole weighs on the parts. Even though problems of poverty, inequality, jobless growth are all inter-linked and demand a systemic and holistic and coordinated approach, policy instruments often adopt a disjointed perspective to achieve results, ignoring the interdependencies amongst systems, sectors and scales.

Given the many dots that need to be connected in the process of amalgamating socio, economic and environment development, sustainable development can best be achieved using a synergistic approach. By understanding the underlying structure and relationships, we can better identify how development interventions ripple through the whole system and recognise under what circumstances the interaction of elements of the system would behave differently. Such an approach provides a holistic understanding of trade-offs thereby maximising productivity, efficiency and other gains manifold while minimizing unintended consequences. This principle highlights the value of integration and interconnections, emphasising coherence and coordination among various policies and actions for development.

3. Principle of Efficiency

The principle of efficiency means to get more from less. It means reducing the rate of use of resources for the same output and also raising output while reducing negative environmental impacts. To bring about a viable balance between the ever-expanding demands of human economy and the declining productive capacity of nature's ecological systems will require an increase in resource productivity and eco-efficiency.

The principle helps alleviate the problem of scarcity and responds to the sustainability challenge of intergenerational equity by reducing the rate of physical resource depletion, while simultaneously helping to reduce costs by raising resource productivity. Raising efficiency involves sophisticated knowledge of technological and psycho-social systems. It implies using resources better, more wisely and more cleanly to maximise productivity.

4. Principle of Sufficiency

The excessive demands and over-consuming lifestyles of the wealthier segments of society are placing immense stress on the environment while the poor, on the other hand, are unable to meet their very basic needs such as food, health care, shelter and education. The principle of sufficiency requires a change in people's lifestyles and mind-sets promoting the belief for those who use too many resources that less can be better. Such a transition would enable those who need more material resources for a decent life can have access to them, without society, overall, transgressing planetary boundaries.

Sufficiency will necessitate the rich to cut their use of the rapidly depleting resources of the planet to ensure wellbeing for all. They will need to speedily cap their resource consumption and work towards a life of sufficiency. For the poor, the process will be a bit more complicated and slower as they will need access to more resources, not less, until they have reached an acceptable level of consumption, which might be termed sufficient. After which they, too, will have to control their use of natural resources. Improvement in life prospects of the poor provides a double benefit for all insofar as this is the parameter that most effectively reduces the size of families and the rate of growth of population.

5. Principle of Harmony

The principle of harmony lays the groundwork for the current generation to fulfil its aspirations and hand on a better future to the next one. It implies harmonious co-existence in the very diverse fabric of our economic organisations, societal structures and natural systems.

The diversity of our socio-economic and natural systems is the basis on which humanity and civilization have the adaptability to organise themselves and evolve over time. To cope with the exigencies of an uncertain and constantly changing world, communities and societies need to acquire resilience, which comes with systems (technological, institutional and natural) that are flexible, capable of learning and adapting. Multifunctional systems, based on small, decentralised, self-organising sub-systems with governance at each level tailored to the needs of that level often offer the most effective and resilient solutions to today's world.

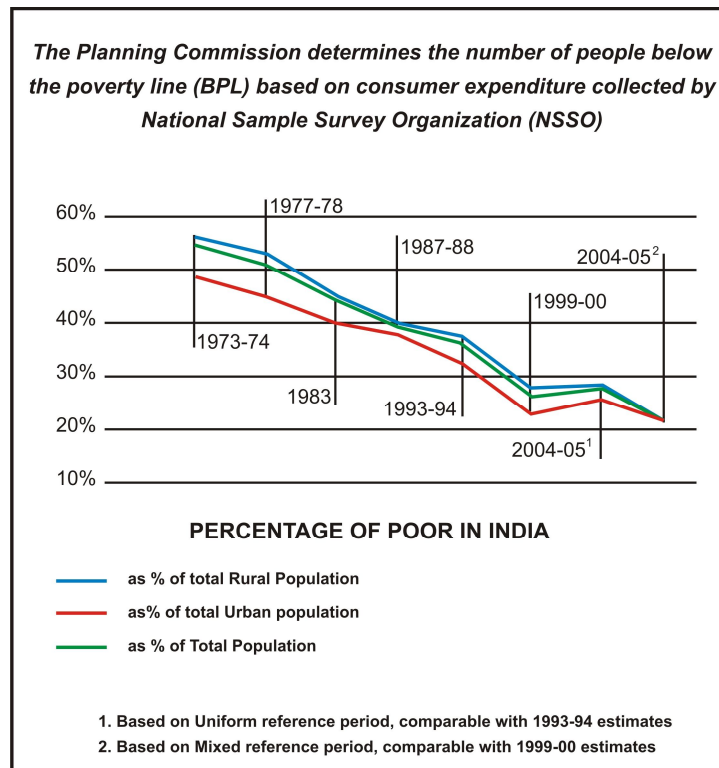
Moreover, there exists an obvious relationship between the diversity of natural systems and the diversity, health and sustainability of human systems - cultural, social and economic. For ethical and practical reasons, no human action should jeopardise the continued existence and health of any form of life, particularly biodiversity and ecosystems.

3. India in 2014 – the present we have

3.1 India...pulling together or pushing apart?

Over the past six decades, India as a whole has made undeniable, and often quite dramatic, progress on many fronts. People have attained unprecedented levels of health, wealth, and knowledge. Food production has grown to levels inconceivable even a few decades ago. An ever-growing range of products from industry is accessible to an ever-growing range of customers. Cheap sources of energy have made possible facilities for travel and communication that enable large numbers of people to live a life of convenience and comfort on a scale never known before. Many diseases have been largely eliminated, and life expectancy has risen significantly. The proportion of the population living in extreme poverty declined rapidly from an approximated 65 per centⁱ in the 1950s to 22 per cent today.ⁱⁱ

Our achievements in industry, agriculture, and space science are well known. And our young professionals and entrepreneurs compete with the best worldwide. Some of the world's largest IT companies, banks, airlines, and other businesses are run by Indian CEOs. And so are our own large multinational corporations, some of which own iconic global brands such as Jaguar cars and Corus steel. Since 1991, we have created more than 80 billionaires, becoming the third ranking country in this field. And they are supported by some 150,000 millionaires, many of them newly minted.ⁱⁱⁱ We now have more, control more and know more than ever before.



Source: the alternative.in, 2013

India has made extraordinary strides in building up a vast modern economy in a very short time frame, much shorter than the one taken by the nations of Europe and North America who modernised earlier at a more leisurely pace. India has made transitions in industry, infrastructure, agriculture, and other sectors in the last two decades that took the industrialised countries nearly two centuries to achieve.

Yet, the overall picture of our economy is not as healthy as these figures might suggest.

Owing to the fast pace and process of development, it is only natural to expect some strains and tensions in the economic structures built up at top speed by a country like India. New and emerging concerns like lack of purchasing power, ecosystem degradation, climate change, materials scarcity, and other that demand more than nature can supply have impacted the normal stages of growth that economies are expected to progress through. The unprecedented creation of wealth is going hand in hand with unheard-of expansion of inequity, loss of societal resilience, destruction of the environmental resource base, erosion of political democracy and rampant unemployment. This has led to a growing and profound uneasiness among some thoughtful people regarding our development model and trajectory.

These factors raise certain pertinent questions such as:

- *Is 'soaring India' a self-contradiction?*
- *Are we on the road to a sustainable future?*
- *Does the 'Trickle-Down', on which the justifications for the disparities created by neoliberal policies rest squarely, work?*

Such questions may sound simple, but they go to the heart of the rather complex reality we find ourselves in. Political, academic, and public discourses have not adequately addressed these kinds of queries to those who propose either extreme of the political spectrum - straight socialism on the one hand and full-blooded capitalism on the other. And this has retarded the development of our economy over the past 60 years, with the ideological pendulum having swung over to the political right at the present time.

But the saddest part of the story is that no matter which part of the spectrum the pendulum happens to be in at any given time, neither the poor nor nature stand much chance of being heard except at the time of elections. As a result, very few people, rich or poor, can feel secure under the tension of these economic and social forces.

3.2 Where did we go wrong?

For the first 40 years of its nationhood, India suffered from a mismanaged 'socialist' economy in which the roles of government and businesses were poorly mixed up. Government was running power stations, steel mills, pharmaceutical companies, airlines, hotels, and bits of pretty much every other sector of the economy. It was so busy managing businesses that it could hardly fulfill its mandate as the guardian of

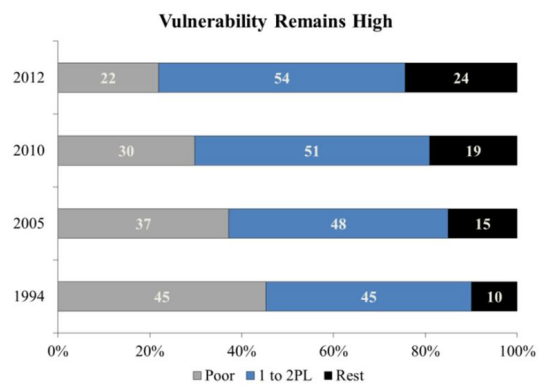
the nation’s policies, regulations, and enforcement mechanisms. The private sector, on the other hand, was busy cultivating ‘connections’ and running government from behind the scenes. This crossover of responsibilities meant that the economy could neither generate the goods and services it needed nor the jobs and purchasing power that the consumers required. The winning role model that India was supposed to be for the global South in the 1950s, with its mixed economy, non-capitalist model of development, and a welfare state gradually became a losing laughing stock as other Asian economies such as Taiwan and Korea, who found strong synergies through their much clearer demarcation of responsibilities and careful nurturing of synergies among the public and private sector.

The arrival of the neoliberal reforms of 1991 may have flooded the Indian markets with monies, but there has been *stagnancy in real development* for most of our population. These ‘reforms’ abandoned parts of the socialist model and reliance on crony capitalism was raised to an even higher order, making a few rich people still richer and large numbers at the bottom of the pyramid poorer, some relatively and others absolutely. However, the electoral implications of the demographic profile of India meant that no matter how high the commitment to neoliberal policies, no government could remain in power for long without committing strong socialist inspired promises to provide welfare services and subsidies by the state, such as for employment generation, farm inputs, and food. Such promises whether delivered on or not, were often very costly, financially, and psychologically. And since the ‘reforms’ were never fully implemented and had inbuilt contradictions, they have led to hodge-podge results characterised by growing economic disparity, increasing social alienation, and massive environmental destruction.

3.3 So, where are we now?

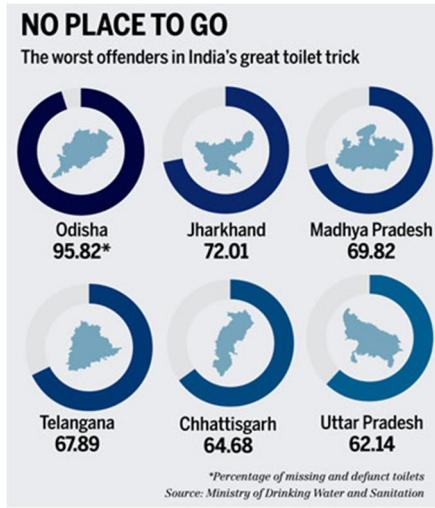
On our poverty and deprivation indicators...

Even though poverty indicators have shown significant improvements (using the official poverty estimates), the absolute number of poor has gone up from 200 million^{iv} in 1950s to about 270 million people today.^v And while many may have been pushed above the poverty line, there is still high vulnerability amongst our *nouveaux non-poor* - three out of five Indians are at high danger of being pushed back below the official poverty line with even a slight shock.^{vi} *Central Statistics Office and World Bank, 2013*

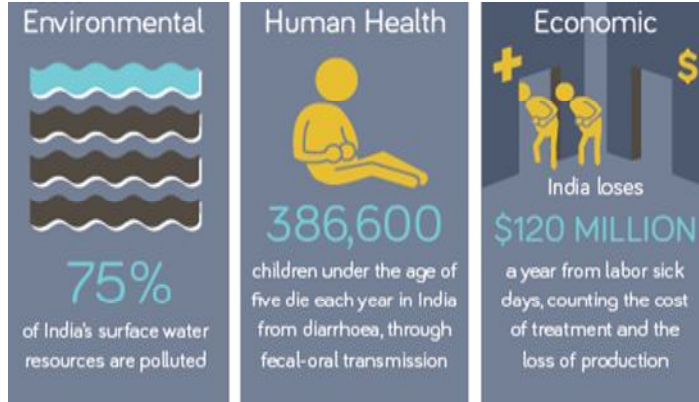


As the largest liberal democracy in the world, while India has worked hard to position itself as a credible major player in the global economy, this credibility is difficult to achieve in the minds of others when the country has deprived a large section of its people from access to basic needs – health, education, food, shelter, energy, water, and sanitation. India is home to one of the largest number of poor and hungry persons, where more than 50 per cent of its households have no toilets or regular supply of electricity.

No or poor access to basic needs further reduces the capability of the poor to participate in the economic system, trapping them in the vicious cycle of poverty and deprivation.



Consequences of Untreated Waste in India



Source: next billion, 2013

This deprivation is further compounded for the vulnerable and marginalised sections of the society especially women. The traditional patriarchal norms have relegated women to secondary status creating a collection of disparate and interlinked problems in the Indian society. Indicators reveal that in terms of education, access to economic opportunities, and overall health status, women fare worse than men - drastically inhibiting not only their abilities in decision making and participation in the socio-economic system but also adversely affecting the development of their families and thus, the community as a whole.

The gender inequality is reflected in India's low rank on the Gender Inequality Index - 129 out of 146 countries with a value of 0.617. In fact, among the South Asian countries, India is second from the bottom, after Afghanistan.

Poverty and deprivation is a complex issue, deeply intertwined with economic, political, social, cultural, psychological, and environmental factors. The Government of India's narrowly defined official poverty figure, based on calorie intake, education, and health criteria, estimates those below

The Many Estimates of the Poor

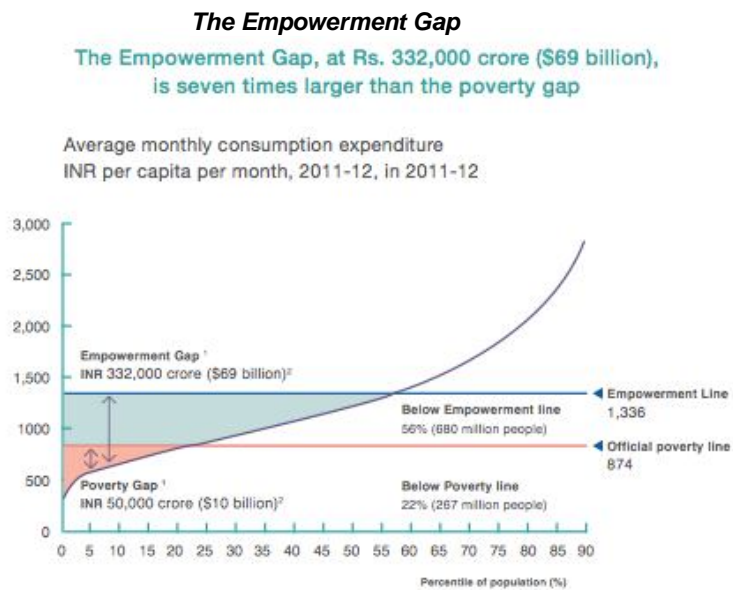


Over the years, there have been many estimates of the number of poor in this country. The most notable are those by the Planning Commission which counts to estimate 'how much' poverty, and the Ministry of Rural Development which identifies the poor to know 'who' is living below the poverty line. The varying definitions and approaches to count the poor have produced a range of estimates.

Source: the alternative.in, 2013

the poverty line at 270 million in 2012-2013 according to the Planning Commission.^{vii} The equivalent figure for this measure in 2004-05 was estimated at 407.1 million by the Planning Commission^{viii} while the same government's National Commission for Enterprises in the Unorganised Sector using equally plausible criteria estimated it at 836 million^{ix} for the same year.

Amongst them come many more estimates from equally credible sources like other government estimates, World Bank, and UNDP. For instance, 640 million people are counted poor according to more holistic measures of poverty like the Multi-Dimensional Poverty Index of the Oxford University^x while the Empowerment Gap of the McKinsey Global Institute states that 680 million people are deprived of basic needs and amenities^{xi} - as distinct from the official poverty line. With such enormous variation in estimates of one economic parameter, arguably the single most important number for making national policy, one has to wonder how any policy for the country's future could possibly be made with any credibility or even meaning.



Source: National Sample Survey Office survey. 68th round; McKinsey Global Institute analysis

On our economic development...

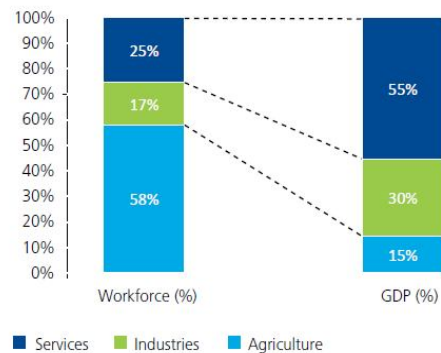
The theories on which our current economic systems of production and distribution rest today *do not* work - growth must come first, even at the expense of distributive injustice and human misery - efficiency over equity...machines over people...the rich before the poor...development over environment. Chasing GDP as the sole indicator of development has created a “series of fallacies, false assumptions and distortions” contrary to our “constitutional vision of ‘Abhyudaya’, the humanist development”.^{xii} Economic

growth is simply a *means* to achieve development - for our purpose defined as *wellbeing for people and the planet*.

In this chase, the modern Indian economy is headed to an era where cheap machines produce even cheaper products for other cheap machines to use. As a consequence, human beings have less and less to do. It is common to see more and more automation in the face of more unemployed people – followed by more and more products chasing less and less purchasing power. The labour saving technologies and mechanistic economic structures lead to a growing supply and stagnant demand – until, of course, we reach the catastrophic environmental transition when supplies collapse altogether and both human populations and their demands collapse with them.

The period of globalisation and rapid economic integration is not creating jobs at the rate needed to keep up with the growth of the labour force. Indeed, the indications are that certain kinds of jobs, including large industry and agriculture, are being lost and that there continues to be a net addition of several million unemployed people every year. Furthermore, with the industry becoming more and more productive, the productivity differential with agriculture is increasing. As a result of rapid growth of the industrial and service sectors, the share of agriculture in GDP fell much faster in recent years than the share of agricultural labour, and the inter-sectorial differential in labour productivity and wages widened.

Workforce and GDP contribution by sector



Source: Census 2011 (population); VMW Analytics Service data (state-wise GDP) Source: Deloitte, 2011

The eal failure....was India's inability to transform its growth into development, which would have brought about an improvement in the living conditions of people, ordinary people.

- Deepak Nayyar

The favouring of a privileged few, to transfer larger and larger amounts of notional money over longer and longer distances, has left nothing for the more than nearly half a billion people who remain outside the formal economy. What is surprising is that even though India's labour force increased by 200 million between 1991 and 2011, the official unemployment (at 9 per cent) and informal employment (at 93 per cent) numbers have remained the same. This means many jobs have been created but most of them have not been high paying or formal.^{xiii} The result is - *a large informal sector comprising of a highly vulnerable labour force*.

The jobless nature of growth has set the alarm bells ringing for many development economists and policy makers. The number of jobs created fell sharply from 13.7 million in the 1999-2005 period to just 5.5 million during 2004 -2010 for urban regular jobs. Net job creation fell to 2.2 million even as the economy grew at an average rate of 8.6 per cent.

The Rise of Informal Workers

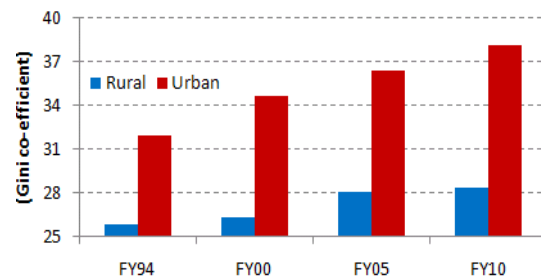


Source: Economic Times, 2013

Moreover, there is increasing evidence that ‘skill gap’ - disconnect between the needs of the employers and the skills that are available in the job market - is costing India dear in terms of business and employment. Our education and training systems have failed to evolve in responding to the needs of the market furthering the problem of joblessness in the country. Another key reason for the decline can be attributed to the fall in the numbers in self-employed category by 25.5 million (from 2004-2005 till 2010-2011) owing to the poor or lack of support provided to entrepreneurs.^{xiv}

Inequality in India: Bad as Ever

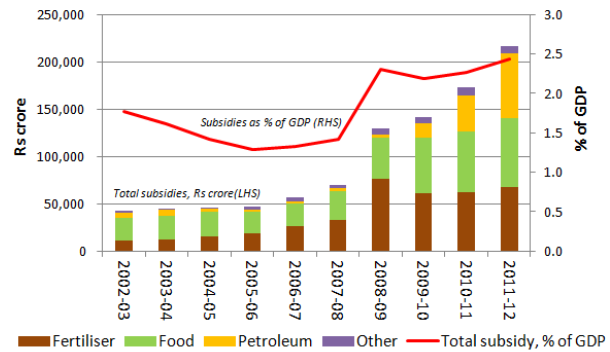
The reasons are manifold. What is evident is that the elegant *trickle-down theory*, of neoliberal economics, that the poor will automatically be better off from the crumbs left by the rich, as they get even richer, has not been proven in the Indian context. The gap between the rich and poor has only widened in the last decade. The expenditure share of the top 1 per cent of India’s population increased from 6.5 per cent in 1993 to 9 per cent in 2010. India’s top 5 per cent of the population spends 21.3 per cent of the total expenditure as against the 17.7 per cent in 1993.^{xv}



Source: Livemint, n.d.

The jobless and exclusive nature of development together with the inability of the government to encourage job creation and entrepreneurship has created dependencies of a large proportion of the Indian citizenry on the exchequers' doles and transfers. Large development subsidies in the recent years have created a cash strapped government limiting further investments for the future in the capacities and abilities of our people. This bias of the economy towards the *rich few* together with the government's focus on flagship social development programmes over the development of jobs has limited our economic and social transformation.

How much and what are we subsidising

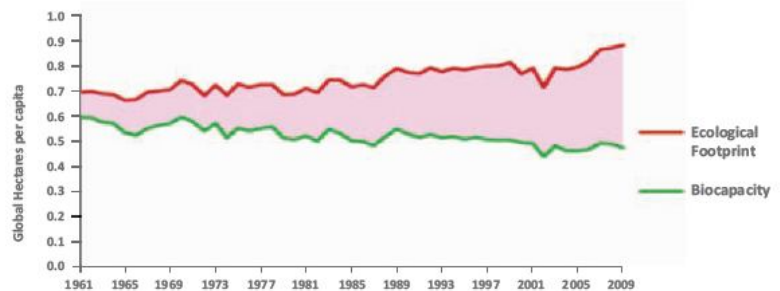


Source: PRS India, 2012

On the state of our ecosystem....

Not only has India overlooked the heightened poverty and inequity in its growth story but also degraded its natural capital on which the majority of its people subsist. We are now operating on twice our bio-capacity.^{xvi} Given the growing demand for resources by different sectors, there are increasing stresses on our ecosystem with over-utilisation of natural resources. This is leading to severe depletion, degradation, and pollution problems with serious implications on India's food security and socio-economic development strategies.

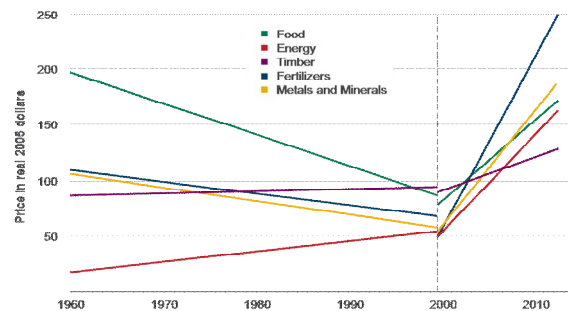
India's Ecological Debt: Time to Repay?



Source: Indo-German Environment Group (IGEP), 2013

These trends remained unnoticed for a period because of clever innovations and substitutions but are now showing up in uncontrolled price fluctuations for commodities, raw materials, and fuel, thus increasingly taking them out of the supply side of the market. While the prices of most commodities were gradually declining, since 2000, this trend has sharply reversed and now most commodity prices are rising every year in India and across the world.

Global Price Rise: Paying the Cost

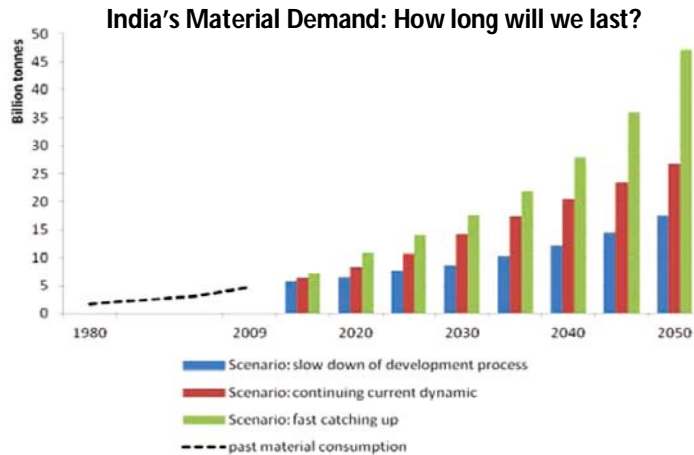


Source: WRI chart using World Bank data, 2012

India also finds itself in the midst of a dramatic journey of urbanisation. 800 million^{xvii} people will eventually live in cities and yet as many will continue to live in rural areas by 2050, creating further stresses on our already fragile ecosystem.

On the demand side, the new era of *consumerism*, led mainly by India's elite and rising middle class, of profligate material consumption is underway. Motivated by the value of *more is better*, there is an insatiable demand for goods and services. To meet such profligacy, producers continue to predate on our degrading ecological base, going back to our defunct models of development.

Currently, the per capita ecological footprint of the richest 1 per cent in India is 17 times that of the poorest 40 per cent - well above the global acceptable limit of 1.8 global hectares per capita (Gha).^{xviii} If India continues its current development trajectory its "resource demand will more than triple - by 2030 – a figure equivalent to the current consumption of all the OECD countries".^{xix}



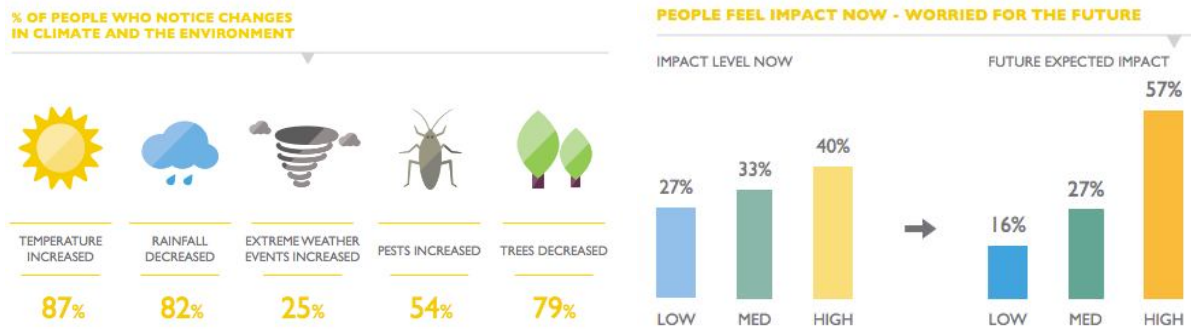
Source: Indo-German Environment Group (IGEP), 2013

3.4 Do We Need a New Development Model?

If this continues any longer, economic forces will automatically kick in to limit demand and ecological forces will automatically limit supply. The new market equilibrium can only be at a much lower level than anyone, even the most ardent conservationist, can wish for. The post Keynesian reaction to such a situation is to revive the economy by stimulating consumption, in the hope that it will generate a virtuous, upward cycle of more demand . . . creating more supply . . . creating more purchasing power . . . creating more demand . . . ad infinitum. Many believe that innovation in technology can solve the problems we find ourselves in. Developing technology in order to go on consuming like the industrialised countries have been doing for the last century is a dead-end. And we will face another meltdown (like the 2008 financial crisis) only more quickly and of greater severity. The problem, of course, is that it can no longer continue like that.

There is a missing link in this chain of reasoning: the fact that we are endowed with a finite, indeed very limited resource base. Creating more supply means mining more resources, which in turn means generating more disruptions in our life support systems. Mother Nature is, up to a limit, hugely bounteous and resilient. But being a vast, finely tuned system, with highly complex linkages and feedback systems,

beyond a threshold that with our present knowledge is often difficult to foresee, she can also become quite vulnerable and break down rather suddenly. The science of climate change is just beginning to show how suddenly and how much. And that is just the beginning because the other missing link, relating to the limits of the societal operating space and their interactions with the environmental ones could be enough to lead to total breakdown in the life support systems.



Source: We Adapt, 2013

While these challenges are recognised in the policy arena, the project mode of implementation creates barriers for our development needs and aspirations. There are overlapping objectives and responsibilities owing to the existence of both the central and state governments coupled with corruption, red tapeism, and vote bank politics. Their reliance on centrally conceived and narrowly designed processes can help achieve results – but not always of the kind needed. Whether these limitations are general or are specific to a project – they are so pervasive that one must accept them as inseparable from the project. Although they are highly amenable to participative decision making it is often carried out by the governments and businesses in a way that is seen to be autocratic. This, together with the short-termism can greatly reduce the value of both its outcome and its impacts significantly necessary for sustainable development.

India is at a critical juncture. The current trajectory of development has shaken the foundation of wellbeing – prosperity of our natural and human capital. There is a feeling of despair and of hope about our future and how we think about our past. India is perhaps at that interesting juncture where we NEED NOT make the mistakes of the others.

India cannot stay afloat for long, if the leaks at one end of the ship of state keep on growing. The answers provided by political leaders, practitioners, and professional researchers have been highly complicated and arcane – partly because this is a good way to stay in business, and partly perhaps because they know no better. The interventions they prescribe, however, are usually simplistic, narrow, mono-dimensional, and short-term. But the opposite is what we need: the real answers are, in fact, quite simple, though they might need fairly complex and strategic interventions to achieve them. At a time when India's natural resource base is poised between collapse and sustainability, the country has to seize the opportunity to show a new path towards sustainable development.

Choices have to be made - some easy, others quite hard.

4. Pathways to India in 2047

The future we get depends on which of four alternative pathways we decide to take

4.1 Evolving Pathways for India

Forecasting the future is an ancient practice common to most civilisations. From oracles and prophets claiming some higher knowledge, to astrologers and fortune-tellers using crystal balls and tea leaves, 'futuologists' over the centuries have plied their wares to a world hungry to know where it is going. Today's futuologists rely, however, on more modern and sophisticated methods to explore the trends and directions of the economy, society and issues of human concern. These methods range from building broad-brush scenarios based on reasonable assumptions to detailed analysis of sophisticated systems models using carefully validated sectorial data.

Mathematical models, such as those used in the rigorous science of system dynamics, using detailed biophysical and socio-economic data can provide powerful insights into the future outcomes of present decisions. However, their very precision often acts against their reliability as predictors because of the uncertainties and unknowns that exist in the real world, which can quite easily emerge unexpectedly and derail their conclusions. Moreover, they can be complicated, requiring sophisticated training to create and interpret, so they are often not fully accessible to either decision makers or the lay public. There is, therefore, also great value in studying less precisely defined, holistic 'scenarios' for a wider understanding of the broad contours of how the future will or could unfold.

Two better-known and trend-setting scenario exercises come from the Global Scenario Group (GSG) and the Shell Oil Company, who have been working for several decades on analysing world futures based on different assumptions. The most recent Shell Scenario is based on two 'lenses', Mountains and Oceans, with two different regulatory regimes involving different relative balance between the involvement of government and the private sector in decision-making. Shell Scenario exercises in the past have been more catholic in their choice of assumptions and treatment of wider socio-economic policy concerns and have delivered deep insights into the way current decisions impact a broad spectrum of future outcomes.

The GSG exercises have over the years, homed in on three broad groups of scenarios, each with two alternative sets of assumptions. These are, more or less in self-explanatory descriptions:

- Conventional Worlds (Business as usual, Markets, New technologies, No major surprises)
 - Market Forces: Reliance on the invisible hand of the market
 - Policy Reform: Continually promoting sustainability
- Barbarisation (If no corrective action is taken on present trends)
 - Breakdown: The world descends into conflict and collapse
 - Fortress World: Environment collapses, elites retreat to enclaves, others exist in poverty

- The Great Transition (Changes in societal values, Materialism/greed decline, Solidarity rises)
 - Eco-Communalism: Localism, environmental ethic, strong civil society
 - New Sustainability Paradigm: Lower population, consumerism, and environmental footprint

These and other scenario building exercises are of great value in helping evaluate the consequences of the way the future is currently unfolding and in designing a different one, should such change be considered desirable.

The problem with the scenario method is, of course, that the reliability and therefore value of scenarios lies in how well they are tailored to the context of the issues in hand. A global scenario for the economics of metals, for example, can be a straightforward and very accurate analysis because the objective of the exercise and the data needed can be precisely defined. A national scenario for sustainable development, particularly for a mixed economy such as that of India, however, is a highly complex task involving assumptions and judgments that can assess the implications of wealth and incomes ranging from tremendous affluence to extreme poverty; ecosystems from warm tropical islands to freezing Himalayan mountains; and cultures ranging from indigenous communities in remote forests to cosmopolitans in the biggest of cities. One thing is clear, that identifying what kind of future is desirable and how it is to be achieved requires knowledge and prioritisation of the needs of those who live at the margins of society. Western scholarship addressing the circumstances of over-affluent populations over-drawing rapidly depleting resources from nature may well be justified in calling for a 'simpler life', doing with less and cutting back on waste. However, for the very poor – of whom there are several hundred million in India – such responses can begin to make sense only after the basic needs of every citizen have been met.

Drawing lessons from past work on sustainable national development, and on other scenario work of the type just described, presented below are some basic scenarios of the future to enable the people and decision makers of our country consciously to choose among possible pathways ones that will lead to sustainable outcomes in the least possible time – for the greatest common benefit at least overall cost. The primary goal is to identify a pathway that will lead, sooner than later, to India becoming a sustainable economy and society – in which no one is left behind and where our environmental resource base becomes and continues to be healthy and productive. Achieving such a goal entails the widespread adoption of sufficiency-based lifestyles, employment of resource-efficient production systems, and nurturing of diversity in the economy, society, and nature.

The purpose of understanding the alternative forms India's future may take is not an end in itself but rather a first step towards *designing* the tools and the means by which the nation can design its future to be sustainable. These scenarios have been developed to enable us to state our assumptions clearly, dive more deeply and convincingly into their implications and challenge our thinking with particular

reference to India's current development trajectory and its implications for ourselves and for coming generations.

To make the analysis of our future clearer and more accessible, we use four simple metaphors and storylines based on them, to develop a set of possible alternative pathways for India in its run up from the present to its first centenary as a nation:

- Can India continue as a ***Copycat*** nation, with its current **business as usual (BAU)** approach — single-mindedly, unquestioningly chasing economic growth in a social environment characterised by rampant inequality, runaway consumerism and ruinous devastation of nature? Such a base scenario can lead only, inexorably and rather quickly, to outcomes that are unsustainable and, in short order, unstable or self-destructive. At some point, surely within the working life of today's youth, people and nature will be forced to fight back, leading to social, environmental and demographic pressures that will automatically trigger an economic reversal – the typical outcome for unbalanced or lopsided systems of ***overshoot and collapse***.
- Or will India be able to ***Piggyback*** - to extract useful lessons from across the world, to introduce **incremental change** or **fine-tune** present practices and reorient them towards greater sustainability? Can we broaden our thinking enough to select and emulate best practices, adapted to the needs of our own resource endowments and cultural aspirations? Will we initiate policy reforms that comprehensively combine the innovation and efficiencies of the marketplace and the scaling-out potential of the private sector with the social objectives and environment responsibilities of the public sector and civil society? This is a minimum requirement for any socio-economic system that can both ***eliminate poverty and regenerate the natural resource base***, although it cannot guarantee truly permanent sustainability.
- Given the urgency of the social, economic and environmental threats facing the nation, can India reach the most desirable stage – ***Leapfrog***? In the view of a growing body of opinion,, India now has to introduce a **basic shift** in its societal goals, policies, institutions and technology choices to enable it to make the deep transitions needed for achieving ***sustainable economic and social success***. What will it take for India to design effective new solutions that are right for its people and for its natural endowment even if they involve temporary/transitional handicaps in a world that is globalised and highly competitive?
- Ultimately, in the face of rapidly growing populations and economic activities on the one hand and diminishing social resilience and natural resource availability on the other, it is becoming increasingly apparent that we will have to make some fundamental shifts in our development choices to prevent human civilisation from being prematurely terminated. These shifts, needing really transformative

societal change, nothing less than a **Horsejump**, will necessarily involve **structural transformation** in all spheres -- technology choices, lifestyles, institutions of governance and societal values – which can enable us to fulfill our destiny as the primary species on our planet, taking responsibility for all other living things. Such a jump could give new meaning to the Anthropocene, a new geological era when humanity goes beyond the dominance of the environment to **living in harmony with nature**.

The value of this ‘Menagerie’ is that it is easy to understand and remember – and to argue over, enabling the dialogue to be based on clearly defined assumptions. It can help conceptualise, clarify and communicate persuasively to people of all ages, callings and levels – school children, teachers, academics, civil society professionals, development practitioners, media persons, faith leaders, businesspeople, government officials, and political decision makers. While we recognise that this terminology flows easily in English, and that it may not be easy to translate into other languages, we feel that the value for understanding, recall and communication of these metaphors makes them worth sharing here.

Explicating each of the member scenarios of the menagerie in greater detail may help to demonstrate its use among the different potential communities of users. Each scenario describes the nature and degree of change required from existing practice, but its characteristics cannot be described precisely for all circumstances, so it is important to note that there is some overlap of attributes as one scenario merges and yields to the next higher one.

4.1.1 Copy Cat – **Business as Usual**

India will continue to tread its current development practices and trajectory, emulating development patterns followed earlier by economies of the global North. In this pathway, *our future is grim* - unstable and strained economy, unequal and disjointed society, and degenerated and uninhabitable ecosystems. Driven by the simple domination of a neoliberal economic philosophy, faith of decision makers and their advisors resides in market prices to take care of scarcities, continuous substitution of resources, and improved productivity through innovation. In this scenario, environmental and societal wellbeing will play second fiddle to the goals of the market.

The continuous chasing, indeed maximising, GDP growth and financial numbers on *Dalal Street* perpetuates centralisation of industry, domination of the big business agenda and jobless growth – economic systems benefiting only the rich. While an impetus is provided to the wider economy through large-scale capital expenditures, the myopic view of what the nation needs most will deepen the schisms, rendering the already fragile system unsustainable. The guarded greed of the few leads to unfulfilled needs of the many. The underlying mindset is that **“More is Better”** and the time horizon for decisions is short at best. Continuing on this pathway will create a cycle of exploding acquisition and resource exploitation by a few and rampant growth of unfulfilled basic needs and impoverishment *for most*.

While profit maximising and cost cutting imperatives of the marketplace are likely to lead to some productivity improvements, the main engines of the economy (in addition to agriculture) would continue to be industries based on physical and mechanical processes and would generate some incremental rise in rated efficiency. Consumerism (acquiring more things), the brown (using polluting and dirty technologies), and the linear (descending one way from cradle to grave) dominate industrial thinking. With planetary boundaries being increasingly transgressed, the business as usual scenario is likely to result in further loss of livelihoods, increasing vulnerabilities, price volatility, and unprecedented material use. Resources will be locked into coping with disruption and destruction leading to an environmental breakdown while stunted structural development will create social strife and conflict – *paving the way for a world getting into serious trouble*.

India will desperately seek reforms but will be locked into a policy paralysis. Piecemeal reforms will overlook coordinated and systemic solutions integral for real economy reforms and sustainable development – *creating dichotomies and tensions between opposing groups*. Development interventions give too much focus on outputs without addressing the roots causes and nurturing transformations. For instance, there is less emphasis on creating jobs for poverty alleviation and more on doles and transfers. On one hand there is creation of dependencies with no incentives for entrepreneurship and innovation, on the other it creates a cash-strapped government leading to a fiscal drain and increased economic vulnerabilities like inflation, income inequality, and raised deficits further slowing growth.

The simple advantages that make Copycat - BAU an attractive tactical approach is that it is easy, within the comfort zone of most major actors, requires no difficult decision or financial investment and is simple to sell to the public. Since the costs of inaction are generally deferred to a point in the future that is beyond the forthcoming quarterly statement or the next election, neither business nor government is likely to promote a change. This is usually the default outcome.

This current development model is not viable. If continued along this pathway, in a few decades, we can expect to witness a severe overshoot and collapse - bringing progress to a halt. All in all, India will continue to reduce societal and environmental resilience leading us into a complex web of multiple crises that lead to defunct existing economic, social, and ecological systems.

4.1.2 Piggy Back – *Fine Tuning and Strategic Transitioning*

In thinking through how to transition from the present, dead-end Copycat path we are on, the first step is to make incremental changes based on best practices and tested models developed domestically or elsewhere. Piggyback is an important stage in any systematic effort to reorient a national economy towards sustainability. In terms of values and systems, the conventional desire to economic growth still prevails. Faith continues to reside in market forces and policy makers are open to synergies that can come from acting in complementarity with other ministries or businesses to align with the goals of sustainable development.

In a large domestic economy such as that of India, it involves supporting domestic innovation capacity (in academic, private and public sector institutions) and also the ability to identify, negotiate, adapt and adopt best practices from across the world aimed at raising resource productivity and lowering pollution and environmental damage. For example, India could potentially adopt practices like renewable energy from Germany, water management from Israel, biodiversity conservation from Canada. Such a fine tuning approach, involving acquisition of the best models and technologies from across the globe is desirable but is unlikely to create fundamental transformation in the polity or economy.

Piggyback strategies would phase the transition from brown to green industrial technologies; they would entail a switch in production systems over to more chemistry-based industrial methods creating an incremental jump to the domain of potential efficiency, i.e., *what would be possible*, if small changes involving minor capital investment were to be made – such as normal debottlenecking measures, and industrial engineering, etc. The philosophy of some of our decision makers and their advisors rests on the assumption that rapid economic growth is the primary requirement to reduce the ranks of the poor, improve social and economic equity and reduce conflict. Decision makers at the other end of the political spectrum often assume that more important than growth is the need for mechanisms to distribute the existing economic pie more evenly throughout the population. At the stage of Piggyback, both markets and public sector are essential for enabling technological innovation and policy support are available to enable incremental change to flow smoothly.

In this scenario, a society can achieve reductions in resource consumption and environmental impact of up to *factors of five (5X)*. This is doable today, *with adaptations of existing processes* through technology and strategy. The basic mindset of this phase of the transition to sustainability is “**More for Less**” and the time horizon of decisions is at most in years.

However, while such transformations are necessary, Piggyback interventions are not likely to be enough to reach truly sustainable futures.

4.1.3 Leapfrog – *Deep Changes for a New Economy*

If neither today's BAU methods, nor incremental changes in them through fine-tuning are enough to take us to true sustainability, clearly there follows a need for some kind of a quantum leap that will bring about the level of change required. The third tier of change, Leapfrog, is intended to achieve just that, while leading to outcomes that are humanistic and ecologically sensitive. Moving beyond the limits of Piggyback pathways, Leapfrog interventions include raising the floors (fulfilling basic human needs), which on a finite resource base cannot be realised without lowering the ceilings (consuming towards sufficiency) and plugging the leaks (conserving resources, minimising waste).

A defining feature of this Leapfrog era will be the growing recognition of the close and continuing interdependence of human and ecological systems. Overthrowing the conventional devotion to economic growth, development will be measured by what genuinely contributes to societal goals, which are carefully specified by participative processes. By treating the economy as a sub-set of the ecosystem, and financial capital as subservient to real natural, social, human, and physical capital, this pathway will lead to a deep change – transforming objectives and principles for the wellbeing of the people and planet. Reflected in both concept and practice by the widespread agreement, economics and engineering are treated as a means for achieving wellbeing of people and planet, and not ends in themselves.

For the economy, Leapfrog strategies would embrace green solutions, adding to the physical and chemical focus of production systems inherited from earlier phases, new technologies based on biological processes, maximising reuse and recycling and minimising waste. This would need a quantum jump to the domain of latent efficiency, i.e., *what should be possible*, if changes involving substantial capital investment and behaviour change were to be made – such as product life extension, miniaturisation and sharing of underutilised assets. By Leapfrogging, a society can achieve reductions in resource consumption and environmental impact of up to a *factor of ten (10X) or more*. The basic mindset of this phase of the transition to sustainability is **“The Same for Much Less”** and the time horizon of decisions is at least in decades or a human lifetime. Companies no longer view value creation through the narrow lens of financial performance over short time scales, but look to create long-term shared value for both business and society. These new mindsets will foster a highly diversified economy rooted in strong local economies and green livelihoods that advance the goals of sustainability and human fulfillment. Industry will include diverse portfolios of mini, small, medium and social entrepreneurs across regions guided by the commitment to create long-term shared value for all stakeholders. This shift has been achieved in part by clear evidence that taking a long-term and holistic perspective on value creation and a collaborative approach outperforms the hunt for short-term benefits. Both public and private sectors will view and measure growth and value differently.

During the era of Leapfrog, our societies will be more inclusive, equitable and prosperous than they were in the hierarchical traditional systems and class systems of today. Ecological and sustainable resource management will build the resilience of those depending on natural resources for their livelihoods.

Systemic, collaborative, and integrated approaches will help break the *silos and* facilitate strong fundamental connections possible in local, participative decisions systems and micro-level policies and programmes. Forward thinking and informed policy-making will weigh the costs of indirect and long-term environmental impacts. Governance in this scenario is conducted through a web of government, civil society, and business nodes at national, state and local levels, always acting in partnership with democracy, participation and accountability at its heart. This entails a more effective and responsive attitude towards the needs of the communities otherwise marginalised by the traditional top-down approach.

4.1.4 Horse-jump – *Structural Transformation*

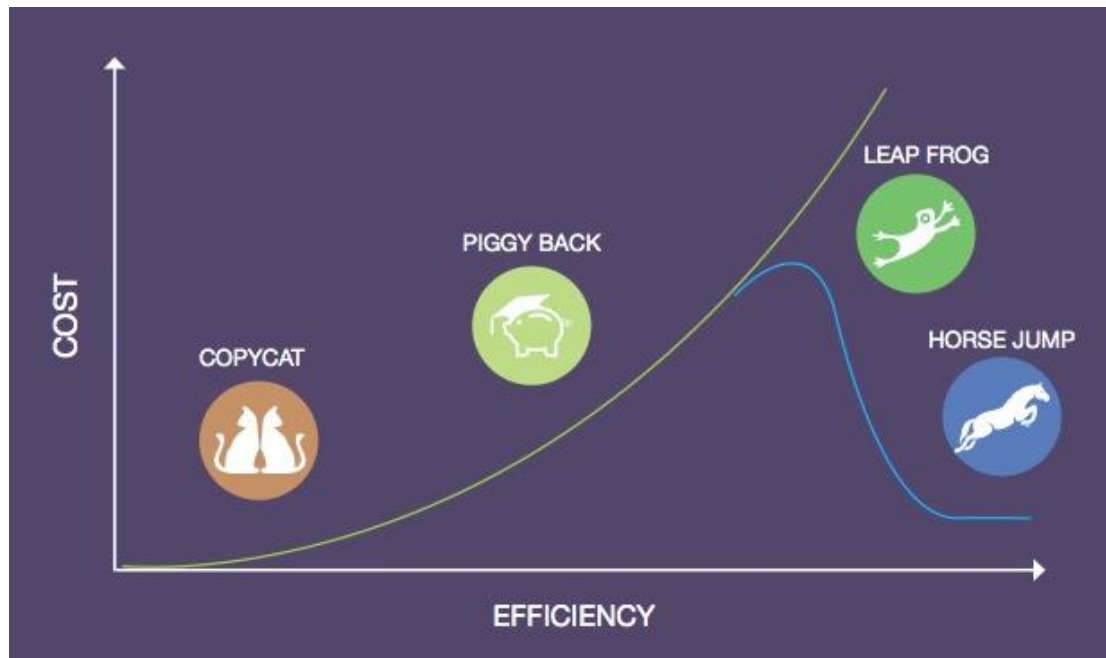
While the deep changes introduced in the Leapfrog economy will hopefully be adequate to reset societal processes and restart them on the road to a sustainable future, the precautionary principle dictates that we still have to allow for any risks that might be thrown up by unforeseen exigencies, unexpected obstacles, unlikely but potentially huge black swan events and the generally hostile universe of unknown unknowns. Given that not one of the big planetary issues which today engage the undivided attention of the world's heads of state at various summits every couple of years (climate change, biodiversity loss, environmental destruction . . .) was considered a threat 25 years ago, it is difficult to imagine that no new sudden threats will appear in the next 25 years, much less by the end of the century when many of our children will hopefully still be alive.

To create a genuinely sustainable future, the fourth tier of change, Horse-jump, is intended to put the global economy in a truly safe operating space, and place humanity in position to achieve its genuine potential while leaving for future generations, the possibility of the widest conceivable options for choosing their own paths to fulfillment. The Horse-jump era is one of wholly new set of societal values and aspirations that lead to structural transformations of perceptions and potentials. Societies will live by fundamentally different economics, ethics and relationship with their environment from those of today. The defining feature of this era will be a firm commitment from all in society to embed human civilisation as an integral part of the biosphere, with a fuller understanding of the mutual interdependence between the people and ecosystems. Today's institutions of governance, business, and civil society will dissolve into hybrids with multi-purpose, multi-attribute functions.

For the economy, Horse-jump strategies would embrace blue solutions, relying increasingly on biomimicry whereby nature itself or technologies inspired by nature become the dominant basis for producing industrial goods and services and agricultural crops. Such a circular economy takes reuse and recycling to higher levels of refurbishing and remanufacturing, both to minimise extraction of virgin resources and production of waste. This would need a discontinuous jump to the domain of systemic efficiency, i.e., *what could be possible*, if significant changes involving natural technologies, consumer and producer behaviour were to be made, though the capital investment required may not be much. Product life extension, miniaturisation and sharing of underutilised assets will be supplemented by a 'performance economy' approach in which products are paid for by the service they provide rather than being owned. Although there are not many examples yet that can provide empirical evidence, a Horse-jump should be able to achieve very substantial reductions in resource consumption and environmental impact – perhaps as much as a *factor of fifty (50X) or more*. The basic mindset of this phase of the transition to sustainability is “**Less for Less**” and the time horizon of decisions is at least inter-generational.

Horse-jump societies should be able to further improve on the environmental, social and economic advantages of those in the Leapfrog phase.

4.2 Pathways for India



The goal of this scenario building is to provide an insight into the future. It is not intended as a prediction of the future of India but to support informed policy and rational action for designing and building a sustainable one. These scenarios show that if the Indian economy is to flourish and the benefits it brings are to go to everyone in the country, we will have to very substantially change the way we choose our technologies, design our institutions, particularly our financial systems and the way we relate to nature. A sustainable world will need a more socially just, environmentally sound and economically efficient form of development than the one being widely pursued today.

4.3 Menagerie of Choices

	Pathways	Ideology	Dominant Actors	Level of Efficiency Dematerialisation	Technology Basis	Societal Choices	Instruments	Outcomes	Time Horizons
	Business as Usual	More is better	Markets	Rated Efficiency	Physics & Mechanics	Technology	Fiscal Taxes, Incentives	What Is	Short
	Copycat			1X					Unsustainable
	Piggyback	More for less	Markets	Potential	Chemistry	Strategies	Case Studies	What Would Be	Medium
	Fine Tuning		Government & Policy	5X			Best Practices		Temporary (little investment)
	Leapfrog	Same for much less	Government & Policy	Latency	Biology	Objectives and Principles	Statutory	What Should Be	Lifetime
	Behaviour, Innovation & Deep Change		CSOs	10X			Regulatory		Sustainable (more investment)
	Horse jump	Less for less	Citizen Community	Systemic Capacity	Social Lifestyle	Values	Behaviour	What Could Be	Intergenerational
	Aspirations & Structural Change			50X			Education/wisdom		Regenerative (major investment)

Pathways	Business			Domestic				
	Manufacturing	Construction	Waste	Lighting	Cooking	Water	Transport	
	Copycat	Hardware	Cement, Steel, Concrete	Dumping, Incineration	Incandescent, Fluorescent	Electric Plate	Leak Control	Car, Airplanes
	Piggyback	Miniaturisation, Longevity	Lightweight Elements	Sep. Toilets, Composting Recycling	CFLs	Gas, Pressure Cooker	Low Flow, Front-Loading Wash M/c	Fuel efficient cars, Hybrid
	Leapfrog	Sharing, Rental	Recycled Materials	Biogas, Reuse	LEDs	Microwave	Recycle	Public Transport, Bicycles, Airships
	Horsejump	Biomimicry	Industrial Wastes	Refuse	Daylight	Enzymatic	Self-Cleaning Polymers/Skins	Walking, Zoning, Localisation

5. Systemic Transitions We Need

5.1 Vision to Action

The best way to predict the future is to create it – Anonymous

The Central Question right now is: **How** do we build a sustainable future for India?

Few in our country today would disagree that we need a change; but to do so, we need to make some 'fundamental' changes. For these to be effective, they must be systemic, so they must match, in character and complexity, the nature of the problems they seek to solve. By setting self-organising systems in motion, with appropriate and well-defined rules, it is possible for a simply stated solution to acquire the requisite variety to match the complexity of the problem.

Sustainable development – in which the environment, social equity and empowerment are equal partners with economic improvement – cannot be achieved by economic policies that only nurture big, centralised, transportation-intensive, energy-guzzling, and resource-wasting production systems. Our future cannot be created by narrowly conceived, short-term interventions and certainly not by the kinds of misplaced subsidies, give-away approaches common in the many 'so called' *poverty alleviation* programmes.

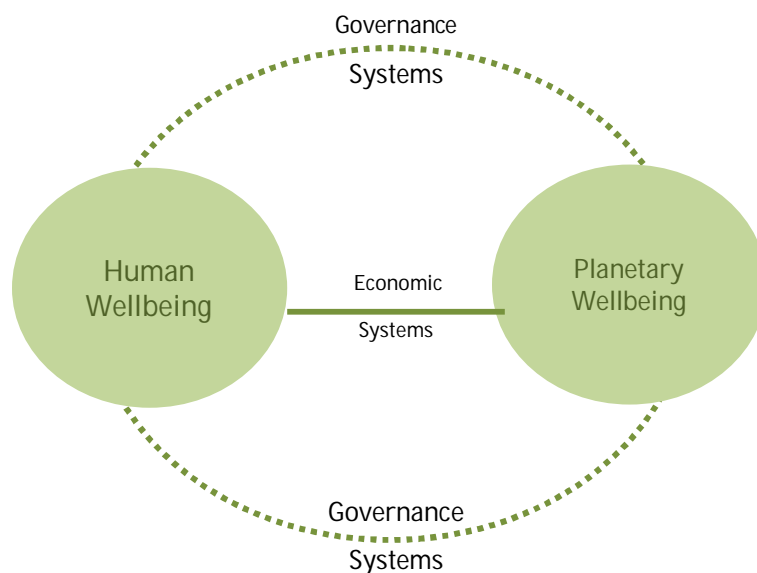
Perhaps above all, sustainable development means building human capacities to make and design endogenous choices – people's own choices, reflecting their own realities, their aspirations and their knowledge of their resource endowment. It also means widespread access to education, enterprise and empowerment, enabling people to find meaning and dignity in their lives. This translates into building the technical, managerial and financial skills of people, setting up robust decision support systems, and creating institutions of local governance capable of managing resources for the benefit of the community. It involves setting up strong public infrastructure – not just the big power stations, highway systems, airports and dams that are favourite activities of the development profession, but also local, renewable based energy production in remote areas, rural roads, and universal connectivity. In addition to maintaining the resource base, sustainable development also means energising people and their communities. And it needs the development of a vibrant, alert, and capable civil society.

If sustainable development involves such a rich mix of considerations, of which economic growth is only one, then how do we bring it about?

To create a sustainable future, each one of us will have to evolve a better understanding of our long-term interest and each one of will have to work with the other, locally, nationally and globally to make it possible. We will need systemic transformations at the level of both ends (development outcomes) and means (identifying risks; addressing root causes), and accelerating key drivers of change (for inclusive, resilient, and sustainable development). The transformation implies a deep (Leapfrog) and structural

change (Horsejump) in our – economic structures, society (collective set of values, norms, paradigms) and its practices (behaviours, implementation modalities) and governing institutions. The desirable transformation to a sustainable India implies a fundamental change in our:

- **Social systems:** Alter values and lifestyles to embrace quality of life for all, social harmony, and ecological sensibility
- **Economic Systems:** Achieve transformative economic growth and transform economic activity for inclusive and green growth
- **Governance Systems:** To be more participatory/inclusive, effective, forward looking, and legitimate while ensuring people and planet wellbeing



5.2 Priorities We Need

The social, economic, and governance transformations we need are overlapping and strongly interdependent. Taken together, they comprise a vision for achieving a sustainable future for ALL. In one sense this is a highly complex business and will therefore require a highly complex response. However, by breaking the complexity up into manageable action parts, it can be made more practical and tractable

If there is a one-point agenda for sustainable development in India, it is the large-scale introduction of sustainable livelihoods. Sustainable livelihoods are simply jobs. These jobs do, however, have a combination of attributes that set them apart from other types of employment: they produce goods and services for local markets, particularly aimed at basic human needs; they generate a living income and thus purchasing power. A supply of sustainable livelihoods enhances the productive capabilities of people while boosting their self-esteem and social status, laying the foundation of growing prosperity and social contribution. They provide a powerful synthesising, unifying concept that can bring the most disparate

interests together to design more viable economic systems for the future in any country, rich or poor. By definition, sustainable livelihoods bind people to their communities and to their land. Not only do they thus have a positive impact on health, fertility reduction, migration, and other demographic behaviour, but they also permit a far more effective use of resources for the benefit of all.

The creation of sustainable livelihoods is relevant as they ensure that India's largest asset – its demographic advantage – does not become a liability. They are relevant because they ensure improved quality of life. Livelihoods and lifestyles are inextricably linked. Simplistic theories on how the corporate sector is creating a new market for its products by redesigning, recosting, and repackaging them to suit the tastes and expectations of the poor at the 'bottom of the pyramid' miss the point that people must have the interest and the disposable income to be able to buy these products. In today's economy, purchasing power among the poor comes from income and income comes largely from taking part in the production process – unless job opportunities are created at the same time as the products, there can be neither buyers nor sellers for long.

We need to set in place a virtuous system that will enable for the creation of sustainable livelihoods at scale – both as an ends and a means to achieve overall wellbeing. With creation of sustainable livelihoods as the cornerstone to design a sustainable future for India, we have identified nine priorities that ensure development on the triad of sustainability. *These nine leverage points based on our experience and expertise to create such ripple effects to transform our vision for India into action are:*

1. *Invest in Systems and Institutions to Make Basic Needs Accessible, Affordable and Environment Friendly*
2. *Invest in Capacities of People*
3. *Boost Local Micro, Mini and Small Social Enterprises as Job-Creation Engines*
4. *Invest in Natural Capital*
5. *Encourage Sustainable Production through Sustainable Technologies*
6. *Promote Sustainable Lives and Lifestyles*
7. *Shift from Static to Dynamic Planning and Green Infrastructure for Developing Sustainable, Creative and Humane Settlements*
8. *Move from Shareholder to Stakeholder Businesses*
9. *Strengthen Local Government and Civil Society for Community Empowerment*

Priority 1: Invest in systems and institutions to make basic needs accessible, affordable and environment-friendly

In the run up to 100 years as an independent nation, India should refuse to tolerate the current state of impoverishment of the more than 600 million of its citizens who live in various degrees of deprivation. Excessive materialism has been perpetuating a cycle of exploding greed among some and rampant unfulfilled need for most.

As the first step to a sustainable future, India needs to ensure that all its citizens have access to the means of satisfying their basic needs – food, housing, water, sanitation, and energy needs through solutions that minimise material use. The intrinsic and instrumental arguments of basic needs provision cannot be understated. It is the provision of basic needs, which is the first step before progressing on to meeting higher level growth needs. Governments and civil society could work together or separately to help build the confidence and capacity of individuals to lead a dignified life.

For this, India needs to:

- *Promote decentralised service models and local enterprises that service all, especially the poor to access basic services*
- *Build enabling conditions of affordable supply, appropriate credit, and responsive products/services that promote informed choices and uptake of basic needs like education, health and hygiene*
- *Enhance the effectiveness and efficiency of publically provided services through development of fair partnership models involving public, private, civil, and community collaboration*
- *Encourage the application of clean and sustainable mechanisms for basic need provisions such as climate smart agriculture for food, renewable energy for electrification, and green construction materials for housing*

Priority 2: Invest in Capacities of People

Capacities of people need to be built to support *sustainable livelihoods*, enabling them to cope with stresses and shocks and to enhance capabilities now and in the future. Simply defined, ‘*Capacity*’ enables people to have the ability, backed by the decision systems and infrastructures they need, to identify, formulate, and analyse the problems of high relevance to their societies and design effective strategies to solve them. The access to knowledge and capacity enables communities to choose from among different technology and livelihoods options and adopt those most appropriate for local markets and conditions. Capacity also enables societies to implement solutions and learn lessons from experience so as to redesign future solutions even more effectively. It must be emphasised that women need to be at the center of capacity building as they play a critical role in sustainable development, human rights, and future generations.

To be effective, such capacity needs to be built up in all sectors and levels of society – government, business, academia, media, and civil society at the national, provincial, and local levels – with opportunities for strong collaborative experiences leading to a tradition of dynamic interaction among them.

To enable the capacities of people for sustainable livelihoods, India must:

- *Adopt new innovative systems for basic education and skill development as well as improve learning outcomes that are necessary for livelihoods and entrepreneurship*
- *Improve access to quality education services and infrastructure*
- *Enable members of all communities to access fair credit services*
- *Create local knowledge centres that promote entrepreneurship and information for improved access to livelihoods and the productivity potential of communities*
- *Invest in capacities of the marginalised, especially women*

Priority 3: Boost Local Micro, Mini and Small Social Enterprises as Job-Creation Engines

What is the most basic need of all? Jobs – because if you have a job, you have an income and with this income, you can take care of your other basic needs. The capacity of agriculture to absorb additional labour is rapidly diminishing and the inability of the corporate sector to create jobs given the technology, financial, and marketing imperatives faced by them in the globalising economy poses a threat to the increased labour market. With other formal sectors like governments cutting back gradually on their payrolls and civil society not having the resources to provide jobs, where does India create jobs to gainfully employ its growing demographic dividend?

This is where the role of small and medium enterprise sector comes in: market-based, profit-making businesses that are mostly small and generally local. In most economies, they happen to be the largest generators of jobs and livelihoods. To be viable, they will need to evolve substantially modified market mechanisms that can take account of full-cost pricing and social impacts. This will not only create jobs but also boost local economies leading to equitable growth and strengthening economic diversity for enhanced resilience. In this space, social enterprises that integrate considerations not only of economic efficiency but also of environmental soundness and social equity into business decisions must be nurtured and incentivised.

To boost local micro, mini and small social enterprises, India must:

- *Promote entrepreneurship through formal education curriculum*
- *Boost job creating sectors such as the manufacturing and construction*
- *Create an enabling environment for enterprise development through reduction of administrative burdens and development of critical infrastructure*
- *Design and promote mechanisms that will create and service green SMEs with necessary technical support, financial linkages and marketing support*
- *Promote decentralised/ regional industrial hubs and centres to boost local economies of scale*
- *Set in place policies that will direct investments into these green micro, small and medium enterprises*

Priority 4: Invest in Natural Capital

In a country like India, where close to 275 million people depend on natural ecosystems for day-to-day subsistence, use of ecosystem services get intrinsically linked to people's rights to secure their livelihoods. In this way investing in natural capital represents an important economic development strategy, a link not recognised by India's current development model. The current compartmentalised treatment is pushing India to choose between development and conserving nature. A major outcome of taking insights from living systems and applying them to the economy is the notion of optimising systems rather than components. The economic system – the interaction point between the people and nature - is a subset of the social and environmental system as it the means to achieve social and environmental wellbeing

The conventional linear *take-make-dispose* economic model is falsely based on an assumption of unlimited sources for resources and energy and endless sinks to absorb wastes and emissions. Actual progress will ultimately depend on how responsibly we manage our planet's limited natural resources. There is growing evidence that there are many possibilities for producing higher economic growth using fewer materials and energy. One way is to decouple economic growth from natural resource use. This implies efficient use of natural resources in an equitable, secure and environmentally benign manner for human wellbeing. However this is not enough. We will also need to regenerate and enhance the natural capital base and transform the operating system. This can be facilitated through investments in infrastructures, programmes and circular economy approaches that can enhance the natural resource base.

For such sustainable resource management, India needs to:

- *Redirect investment into nature through promotion of livelihood models that maintain and enhance natural resources like land and water systems*
- *Incentivise businesses to adopt cradle to cradle and waste to wealth approaches in product design*
- *Put the responsibility of cleaning up on the polluter*
- *Adopt the precautionary approach and choose technology and processing with the least risk of causing damage*
- *Create fiscal instruments and incentives that drive green economic activity*
- *Create standards as effective tools for achieving environmental objectives*
- *Use public procurement practices to create high-volume and long-term demand for green goods and services to encourage firms to innovate and get the advantages of economies of scale*
- *Ensure valuation of ecosystem services through adoption of full cost accounting systems*
- *Adopt zero waste strategies in all manufacturing and services delivery*

Priority 5: Encourage Sustainable Production through Sustainable Technologies

Many contemporary economies have demonstrated how much *progress* is possible by adopting an aggressive use of technology. Their experience has, however, pointed to the need for careful selection of the types of technology to avoid wholesale destruction of human, social and environmental values that are also important. It has become clear that how something is produced, where it is produced and for whom it is produced are issues as important as what is produced and who is it produced by.

With the evolution of societal perceptions, aspirations and conditions, and with recent developments in science, design, new materials and production processes, technology innovation is critical for solving the problems of poverty. New products and technologies, many with significant, positive social and environmental spin-offs, are now possible for mass distribution as a result of the application of sophisticated scientific and technological knowledge. *Technology that serves the long-term goals of human development while minimising the use of non-regenerating resources is defined as 'sustainable technology'.*

Sustainable technology usually springs best from endogenous creativity, in response to local needs and possibilities. Relevant and ready for use by the common people, it aims to improve the quality of their lives, while maintaining harmony between people and nature. It derives maximum leverage from the local cultural environment by drawing upon the existing managerial and technical skills and providing the basis for extending them. Sustainable technology often combines modern science and traditional knowledge: a method, a process, a design, a device or a product which will open up new possibilities and potentials for improving the quality of life. It requires frameworks for innovation and delivery very different from those that exist today, either in the global economy or in the village.

To boost sustainable technology development and uptake, India should:

- *Select appropriate technology such that it satisfies the needs of the end client and successfully takes advantage of the opportunities and constraints of the production and marketing processes*
- *Design technologies that can reconcile the conflicting requirements of the market, nature and people -- systems for innovation and delivery comparable in sophistication with those of the most successful multinationals*
- *Incentivise the reduction of critical and scarce resources such as soil, water and fossil fuel use through technology innovation*
- *Encourage recycle, reuse and reduce through efficient design*
- *Adopt fiscal and monetary policy instruments to create incentives that sustainable technologies are adopted*
- *Ensure stringent regulatory frameworks that favour the green and disincentivise the brown technologies*

Priority 6: Promote Sustainable Lives & Lifestyles

We seem to be caught between two basic choices. Either we accept a future that is scarce and unsafe with wars over resources *or* we drastically cut the per capita use of materials and energy by adopting alternative lifestyles. The basic principle is that whatever we consume and waste must be within the capacity of nature to take care of on a continuing basis. This means that the prices and incentives that drive consumption behaviour have to be realigned to promote conservation of resources and more equitable access to the goods and services on offer in the marketplace.

Clearly we must now aim for *convergence*: everyone, and particularly over-consumers, must now reduce the material intensity of their lifestyles and under-consumers may continue to raise their use of resources until the two converge to an acceptable level that lies within the limits set by nature. Currently, the best estimates for this limit appear to be 6 tonnes per year per capita. Countries with high population growth like India must find ways to reduce that growth. In parallel to this, we will need to find ways to achieve the desired level of human fulfillment through use of the highest efficiency technologies available.

It is this shift in our behaviour change that will ultimately positively influence societal consumption patterns and technological innovations that build local economies for inclusive growth. For this, India must:

- *Provide hard and soft incentives to change consumer behaviour and shift material consumption to service. For example, tax credits sharing of underutilised assets*
- *Drive end user campaigns to increase awareness of smarter consumer choices*
- *Create knowledge and new narratives to influence values and mindsets to consume green and local*

Priority 7: Shift from static to dynamic planning and green infrastructure for developing sustainable, creative and humane settlements

A sustainable human settlement provides to its inhabitants not only the basic needs but also caters to needs of recreation, knowledge and cultural integration – *self-sustaining communities catering to all human needs*. For this to be translated into reality, it is essential that everyone puts their shoulder to the wheel and communities create for themselves the settlements they aspire for. Principles of democratic participation, decentralisation and common property management need to be revived.

The settlements of the future that we aspire to need to be designed with careful consideration of the resource implications servicing the demands of its inhabitants. For example, innovative approaches like permaculture and aquaponics offer opportunities for meeting demand while minimising resource use. In these times of rapid change, it is necessary that dynamic and systemic planning guidelines and processes set the rules of the game rather than prescribing its form and function. Needless to say, all players and scale of play have to be defined to avoid mega city growth and possible collapse.

Enhanced mobility and connectivity both virtual and physical for education and livelihoods enhances equity among inhabitants by creating equal opportunities for all. To begin with, it needs the provision of adequate public transport systems coupled with appropriate zoning and planning for settlements taking into account current and projected growth.

A sustainable human settlement makes life richer, promotes social capital building, regenerates natural capital while augmenting economic capital. This development approach cannot be restricted to either urban or rural settings - both need to be provided with these facilities and amenities to promote holistic sustainable development. A sustainable human settlement, whether as smart city or village, needs smart citizens. Our municipalities and institutions will need to work with the youth who will for a long time to come be the majority population and the soul of these future settlements. The aspiration of the youth will truly be fulfilled in liveable and humane settlements that provide opportunities for self-fulfilment and growth of human potential.

To create these sustainable human settlements India needs to:

- Re-evolve models of growth and development that contribute to regeneration of resource catchments for settlements
- Encourage inhabitant engagement to play an active participatory role in the planning and operation of settlements
- Recast planning systems to develop systemic guidelines that enable dynamic and self-correcting settlement development
- Create a livelihood based approach to meeting the needs of the local population using locally available resources

Priority 8: Move from shareholder to stakeholder businesses

The traditional business model in which the shareholder is the owner with the final decision authority focuses primarily on the company's strategy, usually resulting in a business model with its foremost objective to increase the company's stock value with relatively little concern for the interests of the other stakeholders: employees, suppliers, and customers.

In the course of transition, the business community must adopt a stakeholder oriented outlook and view the impact of business operations on a wide range of issues; including at least: profit, reputation, employees, supplies, customers, shareholders, the environment and the communities where the company conducts business. These businesses should no longer view value creation through the myopic lens of growth rate over short time but revise their bottom line to include social equity and environmental sustainability to create long term shared value for both businesses and society, not only as means to profit but also as ends.

The self-interest of business remains an important economic engine, but business interests, too, change. Enlightened businesses should increasingly seize the initiative, showing that eco-efficiency, green marketing and social responsibility offer a competitive advantage. Corporations that pursue new codes of conduct should be rewarded in the market place, while those that do not would be punished by an increasingly informed and vigilant public mobilised by NGOs. Both big corporations and small business should both be important in this transition.

For this, India must:

- *Develop dynamic, resilient and inclusive business models and pro poor product lines*
- *Recruit and source locally and transfer knowledge and competence to local enterprises*
- *Provide facilitative support such as incentives, risk coverage, infrastructure for more greener profitable ones as well as conversion of brown businesses*

Priority 9: Strengthen Local Government and Civil Society Cooperation for Community Empowerment

None of the conventional sectors could, in their present form, answer the Central Question. They are too busy solving their own problems, creating their own conceptual and operational frameworks, their own continued existence gradually becoming the raison of their être.

For development to be sustainable, people must acquire a sense of ownership and responsibility for their resources — economic, social and natural. They must be able to oversee and correct the actions of their elected representatives on a continuing basis. Such a sense of ownership can in the long run come only from actual ownership — enshrined in institutions of local governance involving the entire adult population.

However, bringing about widespread change requires the concerted efforts of everyone in a position to influence social and behavioural change. Since neither those who run government in most countries (of whatever political party or administrative cadre), nor those in business have shown much inclination to provide such leadership, it must come from the others – namely *civil society*, which includes pretty well all organisations that are not in the government or private sectors. Although civil society hasn't, so far, fared much better in delivering the results needed than either government or business, it still offers some hope and could serve as an effective catalyst and the source of new institutional designs for building a better and more equitable world. By providing strong leadership, civil society could, in principle, position itself even to influence the practices of the public and private sectors. It must bring in knowledge from grassroots to bear upon policy development, help test and validate transformative innovations on ground and reach out and build bridges with and capacities of communities for large scale behaviour change and public accountability. The civil society would work from the bottom up to address poverty from the perspective of the poor themselves. They would channel resources back to the livelihood economy through collective institutions, financial systems and appropriate technology and would foster cooperation among businesses, governments and communities.

To facilitate such community empowerment India needs to:

- *Devolve substantial independence in revenue and expenditure and increased autonomy to local bodies for designing, implementing, coordinating, and monitoring programmes*
- *Strengthen capabilities of local bodies' to assess local priorities and of needs, proactive engagement with community members*
- *Engage CSOs in proactive decision-making processes of the government*

5.3 Moving forward ...

Transiting to a greener, more equitable economy and society is neither going to be easy nor simple. With having chosen the path, strategic levers of change will need to be identified such that we are able to manage the trade-offs and convert them into synergies. The game changers will probably (albeit not comprehensively) be truly empowered women and the present day marginalised, skilled human resource especially the youth, green and blue technology based small and medium industries. In addition, the integration of true costs in accounting, the metric for measuring development progress, a free regime of information and knowledge and the fiscal and policy instruments supporting these will be the keys to change.

A whole new approach is needed that goes beyond the shibboleths and dichotomies of the past needs to be adopted for a sustainable India. The future of India will be built on the basis of decisions we take today, on the values we ascribe to all life and nature, on our shared understanding of the definition of development and modernity and on the indicators we use to measure our progress. It will be shaped then, by the institutions we form and nurture, the technologies we choose, the economic instruments we use, and the governance frame we accept.

The future is ours to choose and make.

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