TARAgram YATRA 2010

inspiring sustainability

Towards Green Economies

scalable solutions for people and our planet

Proceedings

17-21 September 2010
Nehru Memorial Museum & Library, New Delhi
and
TARAgram Orchha, Madhya Pradesh

Partners

Organisers

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Views expressed in these articles are those of the authors and do not necessarily reflect Development Alternatives point of view.

Content

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We also congratulate The DA Group for the wonderful work they have done. Special mention must be made of our colleagues in Bundelkhand Resource Centre, the logistics and the event management team and the team which designed the Yatra. Dusty Foot has done a commendable job in video documentation of the entire event. We thank all of them for their crucial support without which the Yatra would not have been successful.

We think that this event was able to sensitise and motivate various stakeholders in the green economy discourse. The policy suggestions and decisions that were made in the course of this event, we hope, will be taken forward.

The DA Group

Preface

The Green Economy Perspective

Our world faces two epoch defining issues - persistent poverty and environmental degradation. These two issues are so intimately related that on scrutiny they in fact merge into one - both being the inexorable result of adopting a highly lopsided economic system. Over the past couple of centuries, this system has given the appearance of great success, but the weakness of its foundations has now become evident to all.

The new path, which will take us to a sustainable future that provides wellbeing and fulfilment for all, must focus much more on the eliminating poverty and regenerating the environment. This means creating green jobs and sustainable livelihoods, strengthening social capital, empowering citizens, reducing our carbon footprint, reversing the loss of biodiversity and reviving the health of our ecosystems, i.e., creating the **Green Economy**.

An efficient, fair and environmentally sustainable society is the basis of a Green Economy. It is key to lifting millions out of poverty by nurturing and enhancing the productivity of human, natural and financial resources leading to the creation of livelihoods on a large scale.

Its purpose is to not only produce goods and services that people need and to enhance the purchasing power with which they can buy these but, also to simultaneously secure access to the myriad ecosystem goods and services upon which the poor depend.

The idea of a **Global Green New Deal**, which has surfaced because of the current financial crisis, has highlighted the vast, yet previously unnoticed opportunities for investing in sectors that are good for both development and environment, such as conservation, renewable energy and clean transport.

These investments can serve the triple purpose of reviving the economy, regenerating the environment and setting development onto a more sustainable path. The idea of re-orienting the whole economy towards environmental, social and economic sustainability has been spurred on by growing international concern with the economic roots of environmental destruction and the need to stimulate growth and prevent large-scale unemployment.

The TARAGram Yatra 2010

TARAgram Yatra is an annual event organised by **Development Alternatives** and its partners to deliberate upon germane issues of sustainability. The Yatra is designed to exchange cutting-edge ideas on how to realise a sustainable future. The event provides leads for follow-up on policies and action at the local, national and global levels.

Focus 2010

This year's focus, **"Towards Green Economies – scalable solutions for people and our planet",** cuts right to the heart of contemporary public dialogue and resonates through every feature of DA's efforts to promote and facilitate sustainable human development for the poor and the underprivileged. Its primary focus will be on **Green Investment and Policy Imperatives**.

Yatra 2010 recognises that in addition to green investment, the achievement of green growth requires the widespread adoption of green technology, the evolution of green markets and a workforce armed with skills to take up green jobs. Only when these are in tandem can the future of the planet and its people be secured.

The TARAgram Declaration - 2010

Preamble

We, the Yatris of TARAgram Yatra - 2010 representing the multi - stakeholders from diverse walks of life: Governments, NGOs, Civil Society, Academia, Media, Youth, Donor Agencies and Financial Institutions mainly from India, initiated a National Level Dialogue to explore the transformative actions and policies needed to move towards a sustainable future which provides well being and fulfillment for all.

Considering that:

1. We have an economic and development model that is failing to address the needs of our people and our environment. About a third of our people remain poor and about a third of our natural resource endowments are degraded. Growing awareness of climate change has brought the concepts of "low carbon" and "climate resilient" growth into focus.
2. We are presented with a unique opportunity to re-orient the economic compass to initiate change at a scale that matches the extent and ratio at which our planet has been ravaged and people impoverished.
3. Concerns over sustainability remain a long way from being integrated fully into policy making that is closely linked with ethics.

Recognising that:

4. **the path for a sustainable future** must focus on eliminating poverty and regenerating the environment in a way that creates decent green jobs and sustainable livelihoods,
5. **transformation of attitudes and behaviours** at individual and societal levels are possible through appropriate governance systems, sustainable methods of creating products and services that lead to equitable distribution of wealth.
6. **green growth** will need to strengthen people's institutions, empower citizens, secure eco-system services, enhance purchasing power, reduce carbon foot prints, reverse the loss of biodiversity and revive health of our eco-systems at a large scale.
7. **there is evidence that a** number of technical, social, financial and targeted national policy instruments exist that can achieve a sustainable future.
8. **policies and mechanisms for scaling up of solutions** need coherent overall vision, agreement on outcomes from all stakeholders, political will and a critical mass of public opinion to enable transformation at the scale required.

9. **large scale impact** will require efforts for green technology packaging and incubation for mass markets, including mechanisms for skill building, knowledge generation and sharing.
10. **green social investments** will be required in the areas of eco-system services, sustainable agriculture, small and medium enterprises, waste management and recycling, green construction, and urban infrastructure

We Call for Action to:

11. **mobilise political will** at the highest level to define targets and outcomes, ensure efficacy in implementation and accountability for action.
12. **foster multi-stakeholder partnerships** to accelerate the transition to a new green inclusive economy
13. **direct investments** including capital to decentralized, cost effective measures that maximise social benefits by assessing the potential for green jobs for sustainability and scalability.
14. **provide market incubation support** for green technologies and services that may be delivered through decentralised channels of micro and small enterprises across the small urban and rural habitations.
15. **strengthen community capacities** for engaging in political and development processes.
16. **continuously advocate** for focused attention on the needs of the vulnerable – the women, indigenous people and the environment for achieving agreed outcomes.
17. **engage and enthuse youth** in green economy decisions at all levels : local, national, global.
18. **promote large scale public awareness** on the need for sustainable lifestyles and the means for achieving it.
19. **assess, measure** and provide basis for new research and development
20. **engage with affected stakeholders to develop** relevant solution packages in identified priority sectors.

We Commit to:

21. **strengthen our efforts** to share and induce transformative processes aimed at green growth.

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Section I

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TARAgram
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1.The Green Economy Agenda
- national and global objectives

In 2008, many serious deficiencies in the present economic system led to the financial meltdown, one of the worst that the world has ever seen in recent times and which led to the collapse of large financial institutions and banks in the US. It was followed by a huge dip in the stock markets around the world. Governments, especially the US followed by most industrial countries undertook large scale bailouts of banks that were accompanied by large rescue packages. As the financial crisis unfolded, it led to a huge negative impact on the development and growth prospects of both industrial and developing economies. Added to this, was the growing international concern about the growth centric roots of environmental destruction and their costs such as climate change, loss of species and destruction of ecosystems.

Today, as economies strive to work their way out of the global slowdown, there is a unique opportunity to follow a new growth path and reorient the growth paradigm to initiate change at a scale that matches the extent and rate of damage done to our planet and this has led to its impoverishment. This would mean creating green jobs and sustainable livelihoods, strengthening social capital, empowering citizens, reducing our carbon footprint, reversing the loss of biodiversity and reviving the health of our ecosystems. i.e. creating the Green Economy. A new and powerful paradigm linking people and planets, to prosperity, can thus be created in the 21st century as it would offer solutions to multiple global challenges.

The earth is going through enormous pressures; with the surprise factors being worrisome (We cannot say that in the next 20 years, newer problems will not arise). Our country, in the past years, has been largely concerned with the problems and possibilities for the rich rather than the poor. In the words of Dr. Ashok Khosla “the earth has a fever - two diseases - Affluenza and povertitis (a small percentage of the population suffers from over consumption, while over a billion people are denied basic needs like water and energy). Both these together lead to problems like climate change, oil scarcity, ecosystems depletion, extinction of species etc”, On the one hand, we have this idea of a Global Green New Deal highlighting the vast, but unnoticed opportunities for investments that can serve the triple purpose of reviving the economy, regenerating the environment and setting a development agenda on a more sustainable path like conservation , renewable energy and clean transport and on the other we have the bleak scenario of companies and economies collapsing, unemployment skyrocketing and the world bordering on what could be the 6th greatest extinction of species of all times.

In India the rural poor are three times more dependent on natural resources than their urban counterpart and this dependence needs to be reduced. The developed countries have also not realised the lifestyle changes that are needed to become less carbon intensive and that can lead to reduced carbon emissions. In the post-crisis years, industrial emissions may have been reduced, but lifestyle emissions have increased. There is little tangible action that has been taken to check this unsustainable behaviour. We are looking for individual and personal transformations from the consolidated experiences from all of us to facilitate change. Time is not on our side in thinking about this so We Must Act Now!

Clearly, the current development models have failed to alleviate poverty in the region and neither have they ensured environmental conservation and preservation. While the validity of the development models itself is questionable, anti growth anti consumerist policies also do not work in developing countries. Growth is central to poverty reduction, but the question is whether the benefits of this growth are reaching the poor (through the trickle down effect). There is also the need for growth that is sustainable. Green economies provide a new model.

The Green economy has to be defined not just in environmental terms, but in the context of India—in terms of social development and job creation. People need jobs and the lack of employment means that people impinge on resources that can lead to conflict, violence and also migration. While creating jobs, there has to be a balance between preserving the ecology, the eco system and exploiting energy at the same time. It will have to involve a large

scale change in the mindsets and attitudes of the people to accept green technologies and this is vital as green growth has the real potential for job creation.

There is a however a major 'disconnect' between policy and what happens on the ground--thus there is a need for a close interconnect between policy and practice. This can be achieved through a multi-stakeholder approach in an open environment followed by discussion. Inclusive growth is built on the foundation of pro-poor technology that is appropriate and which can be scaled up and it could have a business model constructed around it. Enabling policies provide the necessary environment which needs to be fostered by social and market institutions and are fueled by fair and adequate financial investments. Policy formulations are political statements of intent, thus communicating the right message through policies becomes very important.

The packaging of green economy and low carbon growth are of great domestic value and is the key to green growth and all communications. Focus on carbon is important as carbon is essentially a waste and there is a limit to the amount that the environment can absorb. Resource efficiency will have to be the base for the low carbon economy. Energy security is also important in the face of an energy intensive industry set up and an increasing demand for energy for domestic use. In terms of these limits, the challenge would be to understand how to provide energy services to over 350 million poor. These numbers are reflective of similar challenges in other developing countries.

The recognition of the potential of ecosystem services is growing as these services have the potential to kick start local development, which ultimately would benefit all on the national scale. The 'Leapfrog' technologies create jobs for the people through an integrated approach and that use small scale decentralised systems, inspired by nature. The spirit of our people especially the poor innovators should be captured and rewarded because as a nation, all should live lives that are familiar to each other. The role of the informal sector should also be emphasised as it is huge and therefore the inputs of these non state actors, who provide eco-system services to the poor, gain in importance.

2. The Green Economy Coalition (GEC) and the Dialogue Process

Green Economy is a nebulous concept and very difficult to define in tangible terms. Today however, this concept is not relevant in the developing world alone, it has become a pressing issue globally.

The five approaches that dominate the recent Green Economy Action are:

i. Low carbon
ii. OECD/G20
iii. Big banks/companies
iv. Inter-governmental strategies, studies, guidance, toolboxes
v. NGOs/think-tanks

Themes that are often on the list of current debates include:

i. Green government procurement
ii. Green Jobs
iii. Cutting of environment-degrading subsidies
iv. Re-capitalisation of the natural resource base
v. Long-term investment mechanisms
vi. Informal economy, social enterprise and civil society action, how national policies affect people working in the informal sector
vii. Governance for GE and the DNA of governance that can work for the Green Economy

The **Green Economy Coalition (GEC)** brings together environment, development, trade union, consumer and business sectors, North and South and develops a dialogue around issues with a controversial perspective. It is committed to a common cause for accelerating a transition to a new green economy. The coalition fosters a common understanding of green economy themes and promotes learning, creativity and innovation across sectors. With its global and local reach and belief and endorsement of environmental, social, business and economic change, the coalition envisions a resilient economy that provides a better quality of life for all within the ecological limits of our planet.

In 2010-2011, the GEC will convene a number of regional dialogues to bring together the evidence on best practices and poor practices that must be stopped and produce authoritative policy recommendations. The goal of these consultations is to capture the diversity of thinking and action to inform national policy debate and enrich global deliberations towards creating a Green Economy. The series includes events and consultative processes in South Asia (TARAgram Yatra 2010) , Latin America, Africa and the Caribbean with a focus on country issues and cross-cutting imperatives of least developed countries, small island states and economies in transition and Rapidly developing economies, Franchised Dialogues in El Salvador, Pakistan, Eastern Europe, south Africa and central Asia are being explored.

This series of dialogues aims at building and enriching national policy engagement and creating a platform for discussion and deliberation with governments and the private sector including multilateral and financial institutions. They will also act as a tool for building communications for Rio+20 using a 'bottoms-up' approach to partnership with media groups to broadcast dialogue insights on a large scale.

TARAgram Yatra 2010 was the first step in these series, ultimately leading to the formulation of innovative, effective and realistic strategy options to create a green economy, as well as transitional roadmaps for moving forward.

3. TARAgram Yatra 2010 - Objectives, Participants, Process and Discussion Format

TARAgram Yatra strives to fill this gap by initiating a dialogue on moving **"Towards Green Economies-scalable solutions for people and our planet."**

TARAgram Yatra is an annual event organised by Development Alternatives and its partners to deliberate on relevant issues of sustainability. The 2010 dialogue was organised in partnership with Green Economy Coalition, the Ring Alliance of Policy Research Organisations and the International Institute for Environment and Development (IIED). The dialogue provides important leads for follow –up action on policies at the local, national and global levels on critical green economy issues and practical solutions on green jobs, green investments and adaptation for livelihood security relevant to practitioners and policy makers. The Yatra cuts right into the heart of contemporary public dialogue to build consensus amongst key stakeholders to prioritise and sequence issues from the transition stage to sustainability. Those who participated included members of national , state and local governments, businesses and financial institutions, academic and research organisations, civil society and international agencies. The broad mix of interests and expertise was designed to encourage the generation of new ideas, innovative and scaleable solutions and to facilitate the exchange of knowledge and experience.

TARAgram Yatra 2010 recognised that in addition to green investment, the achievement of green growth requires the widespread adoption of green technology, the evolution of green markets and a workforce armed with skills to take up Green Jobs. Only when these are in tandem can the future of the planet and its peoples be secured.

The idea of re-orienting the whole economy towards environmental, social and economic sustainability has recently gained momentum. This has been spurred on by growing international concern with the economic roots of environmental destruction and more recently, the need to stimulate growth and prevent large-scale unemployment. The TARAgram Yatra 2010 dialogue was the first in a series of global multi stakeholder consultation processes leading up to Rio+20.

The discussions at the Yatra 2010 strived to delineate the vision for India, the direction to follow, lessons for other developing countries and the momentum it could provide in taking that vision forward.

4. Green Growth – Perspectives and Priorities *(significant thought breakthroughs at the Yatra)*

The TARAgram Yatra 2010 declaration is comprises these key messages emerging from the five-day event. It includes a few fundamental action points:

- The path for a sustainable future must focus on eliminating poverty and regenerating the environment in a way that creates decent Green Jobs and sustainable livelihoods
- Transformation of attitudes and behaviour at individual and societal levels can be made possible only through appropriate governance systems, sustainable methods of creating products and services that could lead to equitable distribution of wealth.
- Green growth will need to strengthen people's institutions, empower citizens, secure eco-system services, enhance the purchasing power of the poor, reduce carbon foot prints, reverse the loss of biodiversity and revive the health of our eco-systems on a large scale
- Policies and mechanisms for scaling up of solutions need coherent overall vision, agreement on outcomes from all stakeholders, political will and a critical mass of public opinion to enable transformation to the scale required.
- Large scale impact will require efforts for green technology packaging and incubation for mass markets, including mechanisms for skill building, knowledge generation and sharing.
- Green social investments will be required in the areas of eco-system services, promoting sustainable agriculture, small and medium enterprises, waste management and recycling, green construction and urban infrastructure

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Section II

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1. Opportunities for Large Scale Impact - India

The creation of a Green Economy can lead to inclusive growth as there are some clear synergies that exist between green technology and involvement of the poor. It is possible to have more such technologies for promoting economic growth at the national level. In order to prioritise sectors where investments towards greening may be directed, it is important to identify criteria for such selection. In India with a large and growing youth population there is an obvious need for job creation and it is the top most priority -- thus the potential for job creation is a significant criterion. If by 'green economic growth' we understand low carbon, climate resilient growth that benefits all sections of the society and it also contributes to regeneration of our natural capital then we should focus on those sectors that indicate a need for and have a potential for reducing emissions at scale, because they can contribute to an accelerated pace of economic growth that could also be inclusive.

The sectoral priorities will need to address the triple bottom-lines -- of economic growth, social inclusion and environmental conservation. The environmental aspect will look at lowering waste and pollution, the developmental aspect will address not just the availability but access (in terms of purchasing power), fulfillment of basic needs, improved flow of economic goods and services and an equitable distribution of wealth. The economic aspect would entail recovery, growth and job creation.

India's National Action Plan on Climate Change and its related missions prioritise mitigation of climate change impacts by greening selected sectors as well as sustainable development concerns with a focus on energy – renewable energy and energy efficiency; water – conservation, its judicious use and harvesting; agriculture – productivity and efficiency; and habitat – urban buildings. In addition, greening of industrial and transport sectors and understanding of the urban systems and the potential for developing them from an environmental and energy standpoint need to be looked at. Cross-sectoral associations, life-cycle impacts and value chain of products and services within markets should also be integrated into the understanding of the green economy. There is a need, therefore to look beyond 'high potential green economy sectors' to 'green economic systems' – here urban systems and natural ecological-systems need a special mention and attention.

1.1.1 Renewable Energy

Energy is an important driver of civilisations and economic growth. There are huge emissions from energy generation in India that are projected to increase in the future. Even in a developing country like India there are big divisions between the energy use by the rich and the poor and the richest Indians have the highest emissions that are comparable to the emission levels in industrial countries. The poorest are like the lungs of the world having nil or little emissions because of their very low levels of consumption and they provide the space to rich nations to consume more.

In India there is also inequality between the urban and rural areas in emission levels. The pressures on urban infrastructure due to migration have led to the increased use of fossil fuels for the support and maintenance of urban infrastructure. In rural areas the high cost of power for irrigation is combined with low agricultural productivity and low value addition to produce. All these factors and the low human development indices in rural regions, have led to rural dissent and poverty. The use of unclean fuels and inefficient ventilation also has an adverse impact on the health on the rural population due to indoor air pollution. The main challenges faced are linked to the cost of appropriate technology and the availability of power and its access and regular supply to rural areas.

Renewable energy is seen as a major action area as it could find a solution to these issues and fill in the gaps of power deficit in a green manner. Opportunities present themselves in the form of R& D in grid interactive systems with an urban and rural focus. It is encouraging that there is growing market support for renewable energy in India.

Majority of the current grid-mix is from thermal power especially coal. This situation is likely to

continue till 2050. The centralised system envisioned is fossil fuel and nuclear based energy, and it would cater to urban and industrial sectors. Thus Research & Development on making coal sustainable for supporting infrastructure is needed and there is a lot of discussion on 'green coal' but is this concept even possible?

Renewable energy mainly in the form of large hydro and solar projects are expected to penetrate the market. It is expected that by 2030, 25 per cent of India's energy consumption can be met by renewable energy, but a framework where both systems can co-exist needs to be developed. Each must have its own incentives, policies, finance, industry and R&D support.

Worldwide energy policies are however not sustainable and India is blindly following the mistakes of the west, while trying to resolve issues. The pre sent energy policies of India are anti next generation – because the fossil fuels' hidden costs (total lifecycle costs) are not included in the consumers' price and these would have to be paid by the next generation. There is no cheap electricity/energy and its price has to be higher than it is today. Renewable energy options are feasible only if a larger proportion of the world's income goes into paying for it.

In future, the communities would have to bring pressure on the government and industry for a different energy paradigm with clean fuels - both renewable and non renewable (clean coal, nuclear), addressing access to energy, energy security and the lifecycle impact of energy resources. Appropriate pricing can become an important tool. For example, the twin track energy model separates high energy users from low energy users. Caps can be placed on high users as a faster and easier approach to energy security. Consumer awareness is therefore needed for demystifying energy costs in terms of infrastructure, finance, and concepts. An open access policy is a good instrument for renewable energy projects. However, the subsidy eligibility and delivery mechanism are poor and there is no regulation by state agencies.

Another challenge is the slow pace of rural electrification where decentralised supply systems are needed. Renewable energy can ensure access to energy by the 'last mile' connectivity. However, there is also a need to develop models of renewable energy for rural application such as irrigation, enterprises, cooking, lighting etc. Research, design and development in new renewable energy generation and applications, however, would need investments.

Equity is another issue. Most thermal energy production hot-spots in the country – coal zones have lower electricity penetration and are not providing basic energy for the communities living there. This leads to social unrest due to the disparities between energy served and un-served communities. Lack of energy services has meant a large number of rural communities are unable to have basic facilities and pursue productive livelihoods. It is a challenge, therefore, to enable the poor to come to a level of energy consumption, where they can have a decent human existence.

1.1.2 Eco-Construction

After energy, a sector that provides maximum potential for both greening and job creation is perhaps construction of buildings and infrastructure. Seen in conjunction with sustainable human settlement development – it forms, a key area for intervention.

At the basic material level the optimal utilisation of finite natural materials is a major challenge for which identification and mapping of regional materials at risk, is needed. Economical use of materials is advocated, as also the need to look at the complete life-cycle costs of materials, such as cement and steel that are extremely energy and resource intensive. Utilisation of wastes from industries and bio-systems and debris mining will also become necessary.

At the building level, building assemblies and spatial systems need to be studied and optimal solutions have to be found. Innovative design and material use is of prime importance when addressing eco construction. Innovation in green construction technologies is a major area of focus, calling for investments in research and market development. In addition to building

materials and construction technologies, waste management and water management systems, there is need for innovative solutions to address the optimisation of resource use, and recycling possibilities for reducing pollution.
Can buildings become closed loop systems?

The potential for job creation in every aspect of 'green buildings' development' is huge especially in the manufacture of products and the delivery of construction and building management services. Most of these will be new jobs and many will involve the transformation of brown to green jobs in this sector.

In hot countries, such as India, there is a lacuna in research and development for building operations and a negation or neglect of traditional knowledge to develop passive responses to heating and cooling. At the same time, new lifestyles now demand 'smart buildings' with centralised heating and cooling systems using smart energy grids.

Process

We do not espouse any style or aesthetics. The design will be a process of discovery where solutions are found appropriate to the project at hand. The process is driven by three guiding principles:

- Inclusion of user groups at all stages of the project by appropriately structured consultation.
- Search for simplicity and economy of means.
- Prioritising selection of design strategies and technologies in favor of sustainability and energy conservation.

Current barriers, thus are knowledge gaps, lack of capacities and the required market support. The concept of green materials, technologies and building systems can be scaled out and multiplied using education. It could be multiplied through schools of architecture and engineering and training of masons. Credit based incentives are a strong tool for promoting these technologies and processes in the market. There can be policy support through regulations and capacity building that would create an enabling environment.

At the planning level, land management is an important concern. Land use planning is needed to promote commercial and residential proximity and for creating walkable cities that would lead to tremendous energy savings in transportation. Cross-sectoral planning that is combined with cross cutting technologies for land, water and waste management, are required for construction industry. It is important to develop inter-sectoral co-ordination and an integrated technology policy.

1.1.3 Sustainable Agriculture

Sustainable agriculture in the Indian context needs to be looked at from the food security perspective, but since it is a major sector of the economy harboring millions of poor, it also requires a significant poverty alleviation perspective. Traditional agriculture is the largest employer of labour in India, but unfortunately it has a subsistence base. This is changing as the focus on sustainable livelihood draws attention to the financial benefits that can be obtained from agriculture. There is an inherent conflict here however, as 52 per cent of the work force, dependent on agriculture contributes to only 15 per cent of India's GDP. The absorption capacity of land being limited, there is a growing migration to non farm sectors. While there is a need to increase productivity in order to provide food security, there is a parallel need for economic safety nets for this large population dependent so far on subsistence agriculture. Further, agriculture being extremely susceptible to climate change, impact risks, strategies to reduce these risks is the need of the hour. Horticulture

can act as a safety net as it is more commercialised and with stable demand, but if that too fails, then forestry, migration and urbanisation are the last resort. It is important to strengthen all points of this safety net to enable small farmers to survive and practice sustainable agriculture.

The biggest threat to agriculture is depleting resources of water, land quality and natural resources. Climate change variability impacts the ecosystem's ability to provide these services. Strengthening the eco-system's ability to continuously replenish ground and surface waters for irrigation, soil nutrients and bio-diversity is essential for the sustainability of agriculture. The broker (middleman)– consumer nexus in agriculture is another threat. It impairs farmer security as unregulated middle-men offer unsustainable 'deals' to small farmers, who sell their produce at low prices and often undertake contract farming often due to misinformation and/or under duress. The food policies are often inconsistent and / or non-conforming to the ground realities and high food prices can be contrasted to wastage in godowns, which if not remedied, would lead to food scarcity in the future and which in turn could affect the supply of agriculture produce.

While in several places land is becoming unproductive or unviable as holding sizes are increasingly reduced, there is a big change in land-use pattern due to industrial development and urbanisation. This not only threatens food security, it also impacts agricultural livelihoods. Moving farmers to alternate livelihoods for which they are not prepared, especially as in a rehabilitation package after land acquisition, has not benefited the farmers so far. The lack of people's capability and ability to change livelihoods coupled with the loss of traditional knowledge, increases their vulnerability as they have to start from scratch in another field.

Migration is perceived to be easier than adaptation to alternate sources of livelihoods. In all, food, energy and water should be looked at together. An inclusive policy framework at the district, state and national level with a focus on traditional practices that are integrated with the local technical know how and communication skills can help to translate scientific knowledge into local understandable language that will greatly benefit the community. Information Communication Technology (ICT) should be incorporated to enhance access to information.

There is a need for local customised solutions to problems in agriculture in a diverse country like India in terms of agro-forestry and change in cropping patterns. The approach has to be participatory for the sustainability of the agri-practices.

In recent years, the agri–livestock models and current practice of harvesting in large holdings have led to reduced availability of dry fodder. The exploitation of land for cash crops has also reduced green fodder production. This has had a detrimental effect on livestock, which is a major mainstay and support to farmers. The Green Revolution was initiated to increase food productivity, but it had a detrimental effect on traditional varieties which were lost. It is important to revive traditional varieties by setting up more seed banks and ensure that they need to be grown while reducing dependence on fertilizers. This helps in building farmers' confidence in meeting challenges of changing mindsets regarding the quality of seeds / nutrients, etc. Currently there is no handholding support from extension centres or universities. There is a lack of R&D for small and marginal farmers who now widely use pesticides. This is spurred by the lack of any national regulation or strategy for their use and the hefty subsidy involved. In fact, current subsidy on fertilizers and pesticides is more than that on petroleum. The subsidy policy favoring the energy and fertilisers sectors, need to be re-looked from the larger perspective of food security and livelihood security. Similarly, regulations are required for brokers to increase the buying and selling capacity of farmers.

1.1.4 Waste Management

While waste management itself is a 'greening exercise', there are two issues that need to be addressed–one, the tremendous wealth generation potential, especially for small community groups and entrepreneurs and second, the greening of the waste management processes, including issues of human dignity and safety concerns.

Nature by itself does not create waste. Human activities and increasing urban and industrial activities lead to waste creation and accumulation to a degree that is now constraining the eco-systems across the country and globally. The creation of waste also restricts people from producing goods and services in a sustainable manner. Human health and safety are at risk through polluted water ways, soils, landfills and through increased degree of SO2, NO2 and particulate matter content in the air. However, in the Indian context, the majority of the people in the country are too poor to create a huge amount of waste, even though unregulated industrial processes and inadequate urban planning leads to mismanagement of wastes.

However, whether the solid/liquid or gaseous emissions from any industrial or any other process is a 'waste' or a resource depends on the perspective from which it is seen. Solid waste, a bane of today's urbanisation is one area where economic activity, green job creation and environmental re-generation synergise beautifully. To achieve this, enhancing value to the stakeholders involved through proper management is the key.

Public-private-community partnerships are perhaps the most relevant in the arena of waste management as the value chain extends from individual families to small entrepreneurs, local governments and industry. A larger role for private sector can be envisioned as a driver in the process from the demand side. Regulations can be in place that could affect extended producer responsibility and can tackle the problem from the supply side. A change in the attitude of the producers is however imperative for managing waste. Institutional models that target regions of waste concentration, such as railway stations, also need to be developed and promoted.

Key stakeholders

in a SWM plan are those who can significantly influence the plan and who are important to its success.

Primary stakeholders

are those people and groups, ultimately affected by the integrated solid waste management plan. This includes intended beneficiaries or those negatively affected (for example, those involuntarily resettled).

Secondary stakeholders

are the intermediaries in the process of delivering a waste management service to primary stakeholders. They can be divided into funding, implementing, monitoring and advocacy organisations, or simply governmental, NGO and private sector organisations

Waste management models at small and medium town and neighbourhood levels in metro-cities already exist and are working well. Learning from them, there could be more streamlining of the processes for segregation, collection, storage, recycling. It is important to connect them with secondary use points, such as industries, which can use aluminum and plastics, road construction that can use waste plastics and construction industry that can use waste for building materials. Investments need to go into supporting the waste directly to resource use through both community–(decentralised) and industrial-(centralised) processes. Although municipal level solid waste collection through the (kabadi-wala) system has existed for a very long time–the systemisation of this sector can contribute tremendously to new green job creation, clean-up of urban areas and humanising the existing waste handling jobs while at the same time, improving environmental quality in many ways.

The sector can contribute to food security through use of composts from bio-waste management; to provision of alternate material resources for buildings and infrastructure, such as using plastic for road making, fly-ash for building blocks, Styrofoam for insulation, and decentralised energy generation from animal and municipal wastes etc. Environmental benefits would include prevention of burning and hence pollution, cleaner rivers and water systems, less fertilizer load on soils, and healthier living surroundings.

Challenges in the management of solid wastes include the complete lack of segregation by generators of waste that include the urban community, technology gaps in waste handling, lack of technical expertise and facilitation of small waste management entrepreneurs. Lack of community participation and indifferent attitude of citizens, coupled with a lack of funds

and political will at local levels exacerbates the problem. Policy conflicts is another challenge for example, policies that incentivise use of wastes conflict with the “polluter pays principle” as in the case of Fly-ash/pond ash use.

More R&D is needed for technologies for waste utilisation, collection and management of both large scale, as well as small scale collection. Perhaps the biggest challenges today lies in integrating the different scales of operation and in establishing bench-marks for ‘green waste management’ and enforcing regulations at all levels of the value chain.

1.1.5 Water Management

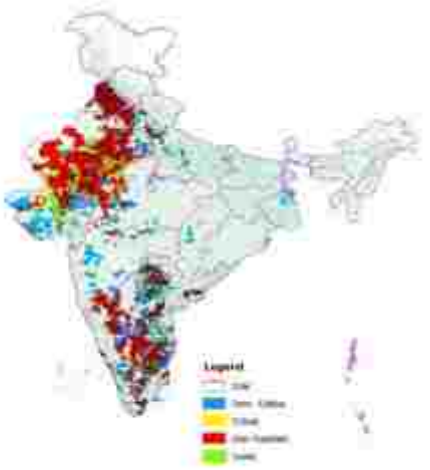
Water per se does not come under an economic sector, but sustainable water management is the backbone of all sectors of the economy. However, Green growth in the sustainable development paradigm can only happen when water and energy securities are ensured for the millions living in developing countries. Water management therefore needs to be understood and addressed in its various facets of planning, budgeting, harvesting, optimal use, recycling and regeneration.

India is a land of open wells. These have been dynamic sources of water associated with craftsmanship and livelihoods (digging and building).The poor still depend on ground water (hand pumps, wells) for drinking and for irrigation. The National Water Policy however, proposes a move away from ground water. This aim conflicts with the ground realities because India now has the largest number of bore wells, but little knowledge on hydro-geology. The northern states have already been over exploiting ground water; the southern states are not far behind. And despite being bestowed upon with a generous annual monsoon on the average, large parts of India suffer shortages.

Further, scarcity of water is predicted in the future due to the impact of climate change. Managing scarcity would therefore become important. There are many approaches for dealing with distressed ground water reserves. However, engineering solutions, although they are most attractive, are only short term measures. Presently a major challenge is technology, which can be harnessed in keeping a bore well from going dry. For a long term solution, the principles of conservation, which is deep rooted in traditional structures, need to be embedded in the water management systems and it should be done now. The embodied cost of

Waste management at Railway Stations creating a livelihood option while managing waste

- Passengers on trains, these days at least carry a PET water bottle and definitely leave some waste behind.
- Railway yards at Junction stations can have a waste handling facility. Waste can be collected from the compartments and taken to the Waste handling unit within the yard space.
- PET waste still is being imported by industry , using it for processing
- PET handling like separating the bottle lid and the bottle. The PET can be further made into smaller chips. This will help transport it in a more economical way. There is a huge demand for this as resource for future industry making recron and yarn for T -shirts.



water in open wells is eight times less than that in a bore well. The Persian wheel is a self-limiting traditional technology, unlike extremely extractive new technologies.

The rich rain water resource available in India offers huge harvesting potential at local levels and different approaches to watershed management through community participation ensure conservation and promote equitable distribution.

Another interesting approach is payment for ecosystem services. Community groups that conserve and maintain water sources, such as upstream communities, forest managers etc should be compensated for their services in making water- especially clean water available to downstream communities living in towns and villages.

Currently the government's emphasis is on targets and not the impact of water mismanagement. However, it is recommended that the Dublin principles of participatory approach, gender sensitivity, and economic value of water should form a part of the policies on water. According to the Bellagio Statement, water and sanitation should be sorted out at the lowest level possible. On the other hand, the STIFLE model incorporates an integrated approach to emphasize the following:

- **Social integration**: equitable rights based approach supported by participatory planning and management processes
- **Technical**: systems design should be appropriate to the region and to the managing entity
- **Institutional**: governance systems should be backed by capacities to plan, implement and manage grievances and have a reddressal mechanism
- **Financial**: costing, metering, pricing and financially viable services models without subsidies that include polluter pays principles
- **Legal**: ensuring Wat-San services as a basic right with clear individual and institutional responsibilities.
- **Environmental**: sustainability plan for conservation and source protection including payment for eco-systems services.

The Dublin Principles

Principle No. 1 - Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment

Principle No. 2 - Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels

Principle No. 3 - Women play a central part in the provision, management and safeguarding of water

Principle No. 4 - Water has an economic value in all its competing uses and should be recognised as an economic good

Policies for water pricing should propose differential economic pricing for urban and irrigation uses. The principle of intergenerational equity should also be reflected in polices. Since water as a free good is not reflected in the GDP, hence there is a need to turn it into the services category. This national capital then has a value and the national and state planning processes can take into account the concept of budgeting for water in its present and future use.

Most wastage of water in India can be termed luxury wastage and is mainly in urban areas. Around 30-40 per cent of water in urban areas which is wasted and not accounted for. This needs to be brought into the budgeting process. The cost of water should include the true value of water and it should be such as to discourage wastage. Further, the concept of 'need' should drive water use as the demand side management of water has a huge impact on greening of economies

There is a need to cultivate an attitude and understanding among communities to facilitate water planning and management at village and community levels, assuming that the next year there would be a drought year . Water budgeting in villages should be carried out on an annual basis. Appropriate cropping pattern and efficient irrigation should also be promoted

as agriculture is such a large user. A good example is Hiwre Bazaar, in Western India where local government village level regulations and scientific tools were able to bring a sustainable picture back to the community. Examples such as these emphasise the need for region-specific thresholds that need to be developed. Fixing per capita consumption and licensing of private wells policy should also be explored.

Relationship building is a pre-requisite for attitudinal change and for initiating a shift in ownership and personal engagement for individuals with their environment, especially in the area of water management in both urban and rural contexts. For this education and awareness are crucial at all levels, especially for children. It is essential to establish an interface between people, water and its manifold uses and its conservation, which can ensure access to clean drinking water for all. Streamlined processes and participatory assessment, awareness, action and advocacy processes in water management will also promote interface between policy and practice, conservation and development leading to sustainable water management.

1.2 Cross-Sectoral Priorities for Accelerating Green Economic Growth

For economies to transform and grow in a green direction, clear focus will be needed to move from 'sector in silos' to 'systems in space' and 'key actors in the systems' would have to be identified. Discussions at the Yatra clearly identified two cross sectoral priorities for India today: (a) promoting sustainable urbanisation strategies and (b) conserving, regenerating and maintaining the potential of natural eco-systems to provide goods and services that form the foundation of economic growth. Key actors that stimulate these systems are the youth in the job market, the small and medium enterprises that form the basic skeleton of an economic system, the farmer and rural and tribal communities that share the closest links with the natural eco-systems.

1.2.1 Sustainable Urbanisation

The growing youthful population that is increasingly demanding greater value and services and the lack of absorption capacity of land to provide viable jobs and wage employment for all is already leading to pressures of migration in urban centres. This trend calls for a serious relook at our response to urbanisation at a national and more regional- district level.

There is a need to look at urban systems and urbanisation differently in the Indian context. The urban population stands between 300 million to 500 million people i.e. 30-50 per cent of the total population. Due to the current migratory patterns, small town boom is inevitable. We need to direct the growth of rural areas into urban areas in a sustainable manner. Designing new cities and towns to cater to the needs of urban population through provision of services that people would demand, is urgently required. District governments should identify growth centres from amongst the town blocks and decide a sustainable growth path for the district with respect to industry, services and education. This would translate into a win-win situation with respect to living conditions and livelihood opportunities.

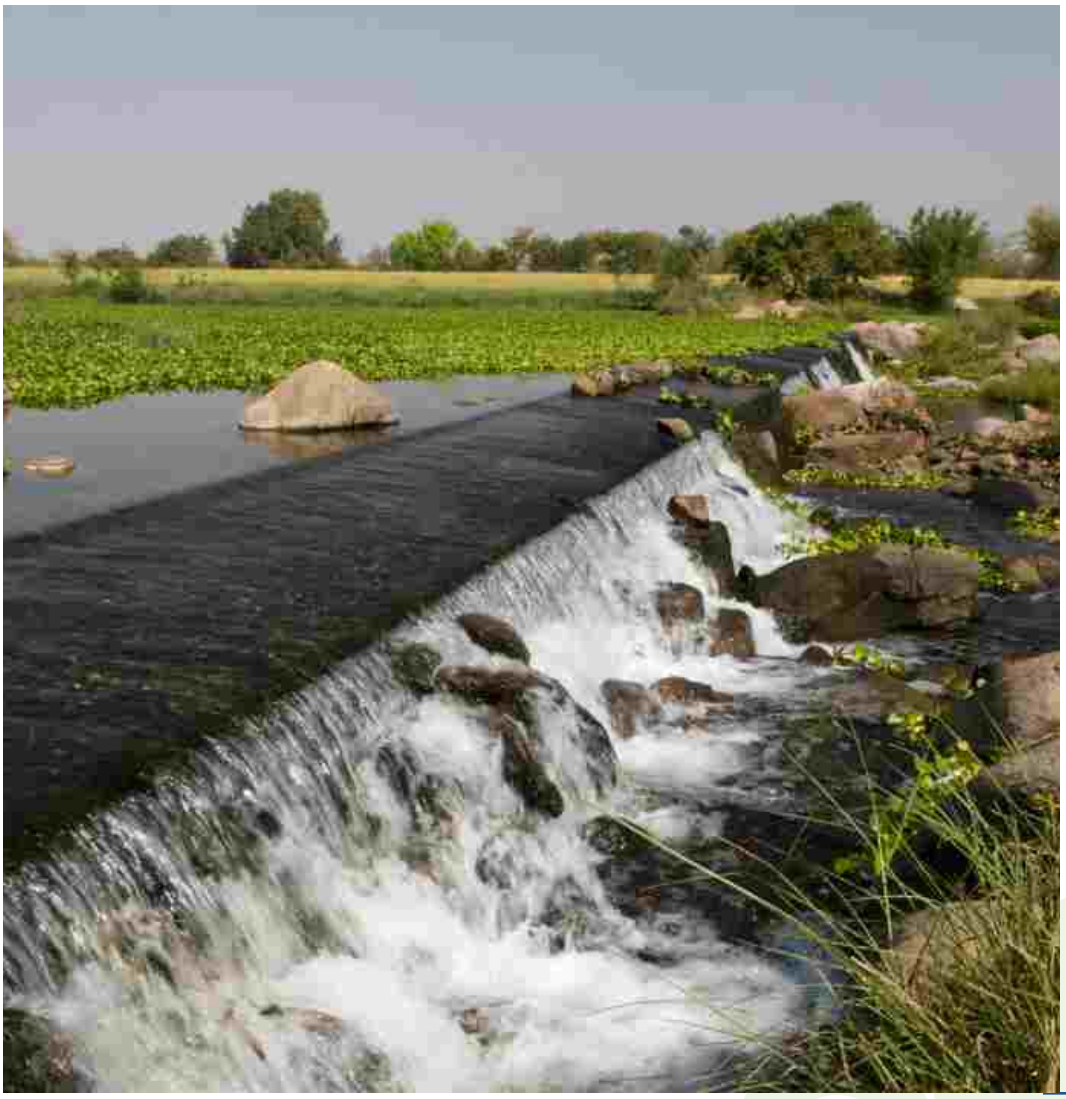
Instead of 'distress migration' as a last resort for coping with joblessness and in the face of decreasing livelihood security in rural areas, a strategy of planned up-gradation of the connecting links between rural and small town spaces will contribute to reducing the pressure on agriculture and also help in finding jobs for the rural population in manufacturing and services in a decentralised manner. It would be a better alternative than concentrating on metro cities and large towns alone. This however, does not preclude development of infrastructure services in rural areas. On the other hand, with strong rural-urban networks at district level and investments into decentralised infrastructure services for water, energy, waste management, rural services would become more viable.

1.2.2 Eco-System Services

Discussions around the issue of sustainable management of water, energy and waste for robust green economic growth have brought out the significance of the limits of our natural resource base and the dependence of economic growth on the health of this resource base. It has been argued that unless the resource base and the goods and services it provides are

valued and a compensatory framework defined, these will be treated as free resources and therefore exploited, yielding diminishing returns. The compensatory framework will need to be based on an equity and rights based perspective. The right of the future generations to enjoy the goods and services from the natural resource base should be as much as we are enjoying them today and the equitable sharing of benefits across all sections of society, along with appropriate compensation for the conservation, management and maintenance of the natural resource base, must be our aspiration.

Watersheds, fragile eco-systems and bio-diverse areas will have to be protected for their future environmental services. Growth models for this sector would therefore have to be different, vis-à-vis that for the industry and would have to be based on the principles of social inclusion. Social enterprises with adequate finance and capacity building measures will need to be promoted and knowledge enterprises – ecology, anthropology, hydrology in biodiversity rich areas would then gain in value and significance. This will require that rural and tribal communities are necessarily a part of the decision-making and policy formulation process so that local economies and their growth is a basis for macro-economic growth polices and markets are oriented towards this goal through regulation. It would also mean that there is enough social pressure on the government so that policies are bio-diversity friendly and fair.



2. Orienting Sustainable Green Economies in Times of Change – the context of India

An emphasis on green growth blends the concerns of ecology and economy. Though healthy natural systems have been identified as the foundation of sustainable economies, the capitalisation or monopoly and control of natural resources by a few is rampant across nations. In a country like India, which is a land of increasing disparities between the haves and have-nots, sustainability will necessarily require inclusion of the poorest in the equitable sharing of the benefits of ecological services and economic growth. As pressures mount on the natural systems, the poor get excluded more and more. And, as the impact of climate change manifests itself, the poor, especially rural communities, face the brunt of it the most. Thus 'growth' that leads to conservation and management of the natural system must prioritise the poor and the vulnerable and help them adapt to changing circumstances.

2.1 Adaptation for Livelihood Security

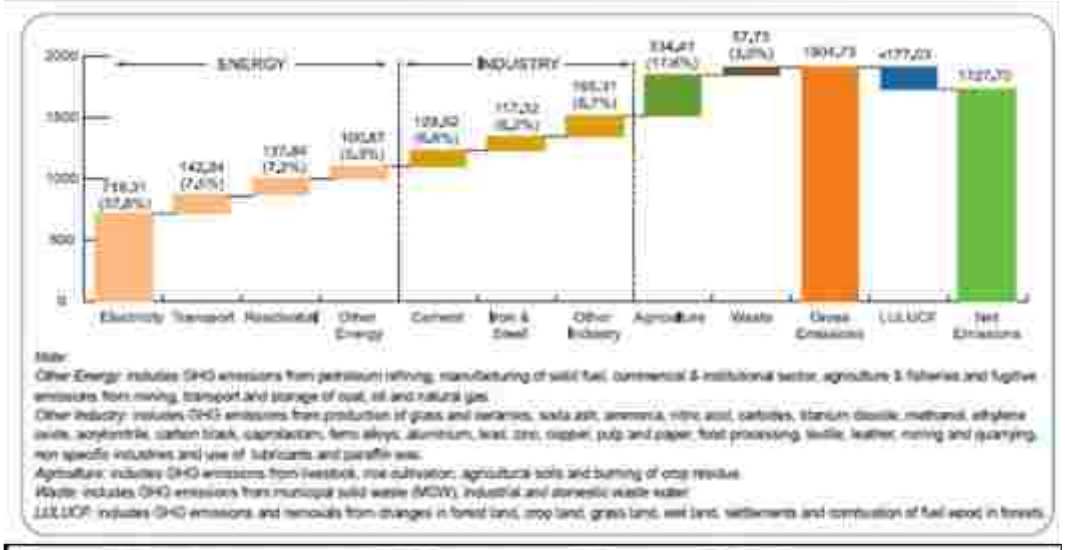
Our natural resources are the ultimate means for our survival. They are priceless, gifted to us by nature. We have not created these resources, but we are utilising them as intermediate agents or inputs in economic terms to achieve intermediate ends or outputs. Governments have in the past set the goal for outputs, forgetting about the quality of life involved in order to achieve those outputs.

The current concept of the ecological pyramid has been propagated with a tiger on the top – being the most dependent mammal , resting as it does on the base of a healthy and diverse natural eco-system. This gets distorted if we are to include the human being as a critical stakeholder in the eco-system. The revised ecological pyramid with man on the top shows humans are the most vulnerable. The new human ecological pyramid has megacities on the top, which is dependant on labour and human and natural resources (food and ecosystem services) that comes from below (rural ecosystems). Megacities are at a high risk from climate change as sustainability depends on the rest of the pyramid. The bottom of pyramid is most vulnerable due to the lack of coping capacity and lack of awareness. Hence the need to look at ecosystems below (the rural, tribal and natural eco-systems) for answers on how to respond to challenges is important. How to protect the ecosystems from the impact of climate change in the face of looming threats from the urban and industrial eco-systems? A paradigm shift is required in thinking about the base to prevent self-induced degradation of resources. The top of the pyramid has to secure the base for its own survival.

As climate variability creates risks to livelihoods and impacts the community, coping mechanisms need to be explored that would help in developing adaptation approaches. Livelihood security is the key to climate change adaptation approaches and a sustainable livelihood strategy would help to cope with climate variability. It creates opportunity for diversification in agriculture and finding income sources from allied industries and other services within the village. Capabilities can be enhanced so that they have a 'safe fail' approach. Strengthening the asset base, ecosystem restoration and management by communities and 'reactive' adaptation are key elements for strengthening of livelihood security.

Closely linked to livelihood security is food security and justice. In a resource constrained world these have been seriously affected by availability of oil that has led to inflationary spirals. The current food price crisis, however has been due to the growing demand for food with rising population, increase in income that has led to higher consumption. In addition, crop damage and limits to increasing supply – land, water, and climate change impact, are turning the age of development to an age of scarcity. There is also a need to shift the debate from science to justice. A fast and fair response to averting a food crisis is to establish social equality by stopping land grabbing by corporations and states and also increasing public investment in agriculture for raising food productivity. There is also need to contribute to raising the resilience and sustainability of small-scale producers. In order to cope with future demands in a sustainable manner in the face of climate change, biodiversity solutions play an important role. Ecosystem services thus become a priority sector.

Today, the mindset of farmers has changed from being in tune with nature to being in tune with markets, as financial viability in farming and integration with formal market mechanisms overtakes the importance of food production, which is supported by welfare systems. Markets therefore need to be directed towards sustainable consumption and procurement processes for which differential growth models with social inclusion and capacity building are needed. It is important to have environmental services and identified eco-sensitive areas should be protected. Eco-regions instead of administrative boundaries can be used as planning units and Green social enterprises should also be promoted, including knowledge as an enterprise.



Source: GHG emissions by sector in 2007 (million tons of CO_2 eq) (MoEF, 2010)

For India and that of many other developing countries include green growth sectors include renewable energy, sustainable construction, water management, waste recycling and sustainable agriculture. Energy sector remains the highest contributor of GHG emissions from India, contributing 58% of the net CO_2 equivalent (eq) emissions followed by, Industry (22%), Agriculture (17%) and Waste (3%). These sectors are not only the major contributors to greenhouse gas emissions they are themselves vulnerable to climate change.

Governments can make a difference by having welfare policies aimed at the well-being of the people. It should stop all exploitative policies which in recent times has also been the result of strong lobbying and group pressure from activists. Trade through fairs and organic markets as well as local markets should be recognised as important players. Sustainable organic agriculture can help in empowering the people by creating local opportunities by value addition to Non Timber Forest Products (NTFPs).

2.2 Creating Green Jobs for Millions

The need for creating Green jobs; "the jobs which are environmentally sustainable and decent", has picked up after the economic recession of 2008. The green jobs would essentially entail:

- Dematerialising economies or decreasing material consumption
- Decarbonising economies
- Minimising waste and pollution
- Restoring ecosystems
- Adapting to climate change

Today, there is also a need for enhancing the quality of jobs and creating decent jobs in all sectors and enterprises, i.e. with adequate incomes and social protection. Soon conditions may arise that would force the transformation of a huge number of jobs, especially in the Micro, Small and Medium Enterprise (MSMEs) sector towards more environmentally sound practices. In the coming years there is strong likelihood of rapid market development especially for green products and services. This may however turn out be a double-edged sword, as on the one hand it will provide opportunities for many small start-ups, but on the other, due to its excellent growth potential may lead to their early consolidation making small start-ups hugely vulnerable to takeover by large Multinational Corporation (MNCs).

This will mean that many people's lives and livelihoods could be affected. However, traditional jobs should not be axed at the cost of new opportunities, rather old jobs should be transformed from brown to green – this would indeed be the case as whole sectors in the economy transform.

Major bottlenecks to the fast realisation of this concept include access to skills, technology and finance. The challenge lies in getting different institutions to work together to promote green jobs. There have been good examples/stories of green transformation – the air conditioning sector's transition from Chloro Fluoro Carbons (CFCs), which was a massive exercise in training and awareness and it has yielded great results. Others include the 'My House My Life' Programme for sustainable social housing in Brazil and Bangladeshi women's groups working on photovoltaic systems to make their enterprises more viable.

The potential of greening can be realised across the entire economy and some of high potential opportunities are:

- Energy efficiency
- Renewable Energy
- Mobility
- Recycling
- Sustainable Agriculture

The tools to support local economic development include:

- Value Chain Development for green jobs
- Sustaining competitive and responsible enterprises
- Generating green business ideas

The creation of green jobs will be dependent on effective polices that promote a skill-based work force for local enterprises in a manner that promotes inclusive growth.

In the last few years, jobs have become very important in the policy agenda of most governments. Even in India, no government at the centre can sustain its position without

creating new and better jobs for its people. There are also government policies that promote Green Jobs at the local level, but to get results we need to create large scale awareness and dissemination of such policies. To accelerate Green Jobs, a multi-pronged strategy needs to be developed that should include policy instruments and fiscal measures, such as: regulation, mandates, public investment and procurement, prices, subsidies, cap and trade and eco-taxes to promote green jobs on a large scale.

We also need to integrate and link various sectors so as to facilitate the creation of jobs as well as the greening of sectors. For example the clean energy sector, especially decentralised renewable energy as creator of employment opportunities, offer tremendous synergies. Unfortunately, there is huge disconnect between energy and employment. On an average 30 to 40 Million MW energy is needed for creating 100 million jobs. Thus, even though costly, there is a need to provide access to clean energy, especially to the poor. Clean energy services would help to create a large number of jobs with the increased security of having regular energy services that also help to transform the existing 'brown' sectors at the village level into green. However, there is very little interest among financial institutions for financing renewable energy projects at the village level, even though, as evidence shows, jobs do get created once villagers are engaged around renewable energy projects.

Many of the current-day micro initiatives regarding renewable energy projects are not currently economically sustainable and will need subsidies. However, clusters can be used effectively to reach economies of scale. For example, biogas can make economic sense if many households are clustered to reach the scale that is viable. There is a need for an 'aggregator' or collector that can take the responsibility for the whole business model and its functioning. A prerequisite is to map employment/income opportunities and the risks involved at the local level.

An ongoing effort is needed to provide the minimum skills for workers in the informal sector to make them employable. Skill building is required to create an enabling environment for the adoption and availability of trained personnel for new job requirements.

New strategies and tools should therefore be developed, which can become drivers rather than just having a single point approach. These include:

i. Representation in climate change debate: Green Jobs get a lot of traction and are hence useful for communication

ii. Eliminate the disconnect between energy and employment

iii. Fiscal measure incentives can be given to create Green Jobs

iv. Different methodologies and tool kits can become drivers instead of having a single project

v. Greening of existing jobs

vi. In traditional sectors, emphasis should be on Green Jobs and how to green other sectors

vii. A win-win situation should be arrived at not by default but by design

To create Green Jobs on a large scale, it is important to identify very carefully who are the powerful actors in all economic spaces and who promote the engagement of Trade Unions. The critical condition for creating Green Jobs on a large scale will require supportive and coherent policy (mixes), coupled with well prepared and equipped enterprises and workers on the ground. Green Jobs, need to be a part of the inclusive growth in India in order to be sustainable.

3. Building Blocks for Green Economic Growth – *national and global lessons*

3.1 Critical Factors/components That Support Sustainable Green Growth

It is usual to point out the limited capacities of nature while talking of sustainable development, which also signifies meeting the needs of the current generation without compromising future generations. Green growth takes into account both economic growth and the environment. It also gives importance to green technologies. The good thing about all this is that the policy makers usually identify a better economic outlook with green growth because the concept of sustainable development has often been looked upon as anti-growth.

The Pillars of Green Growth are

(i) Eco-tax that rewards green behaviour and helps to make pro- environmental and ecological decisions

(ii) Sustainable infrastructure, which is the engine of growth in the 21st century as it promotes efficiencies in the economy and ecological balance of resources

(iii) Green production and services that promote minimum impact on the environment

(iv) Sustainable consumption that addresses behaviour and attitudinal change and lifestyle concerns

There has not been much progress in the path of achieving green growth. In the Chinese model, new technology and infrastructure are key drivers. For India, the way forward is to involve efficient green technologies, leading from the Climate Change negotiations both internally and globally, and in promoting social enterprises especially women based enterprises.

The question is which areas should investments be directed to so as to maximise inclusive and green growth? Some of the possibilities include R&D for the pro poor technologies, e.g. in Europe the private sector has the technology but the problem is the cost which is high and it means that it has to be subsidised by the government. While in Sri Lanka, there is no money for wind energy, but there is money to invest in coal as a form of energy. The type and form of technologies being developed and promoted will need to take into account the needs of the poor and the context of the resource base in the country.

Knowledge systems that blend traditional wisdom with modern scientific know-how and encourage the building of requisite capacities and skills for responding to this new paradigm, will be required. There will have to be a new set of tools and techniques and communication across sectors in which the role of stakeholders will be paramount.

Both political will and policies need to be oriented towards the poor in order to promote green growth. There is today an increasing bias towards market - based economies for growth promotion. However, markets are known for not delivering to the poor. There is a lack of focus on the poor, not just in India but in most of the developing world. Asia may carry the largest number of the world's poor, yet the role of the poor in sustaining and indeed contributing to the growth is not being taken into consideration.

3.1.1. Technology

Appropriate technology is the first important building block for economic growth. If technology is to be used for improving the quality of life and for economic growth, its focus must be on the provision of goods for fulfilling the basic needs and services as well as for job creation.

For maximising both economic and social gains – 'growth' in the Indian context would have to focus on spaces and actors that provide for the well-being of large numbers and also yield large gains on investments. Considering the state of the art of technology in big industry, high investments in it will lead to relatively small gains in 'greening'. However, in the small

and medium industrial sector, small towns and villages, comparatively smaller investments can potentially contribute to big gains, both in terms of job creation and the quality of services delivered. Clearly, attention must be oriented towards technological development for the youth, the small and medium towns, the small farmers and the small and medium enterprises.

For technology to really benefit the stakeholders as mentioned above, it will need to be characterised by decentralised management, value addition to and dependence on local resources. It would be used in supplying infrastructure services and independent capital-intensive infrastructure requirements with 'leap frog' technology systems. The beauty is that such technologies, e.g. mobile telephony and off-grid energy sources are replicable across the nation if there is the right policy and market environment.

The goal is not just economic growth, but green economic growth. It is not just the extraction of resources, but regeneration and maintenance of the resource base also. For instance, using waste as raw material and for this , technology must therefore close the loops.

The technology solutions will need to be packaged as complete solutions with hardware (equipment, production), software (Know how etc) and business models.

Project situations and pilots are needed to demonstrate and incubate technological solutions, while a programmatic approach is needed for technology liberalisation. While the former is the space created by governments and research funds, the latter can only come from actors in the market – primarily the private industry, who can invest in testing and incubating technology solutions for green growth on a large/right scale across varied geographies in the country.

3.1.2. Knowledge and Capacity Building

A bio-centric world view means that we are part of a larger world. This is an important beacon for absolutely everything we do. It is also about contributing to the green economy and linking it to the resilience of the eco - system. The green growth can be likened to natural systems – the plants that actually replenish the soil they grow in even as they produce value in terms of fruits, flowers, better air quality etc. To be green, the economic system will need to imitate nature –bio-mimicry at its best.

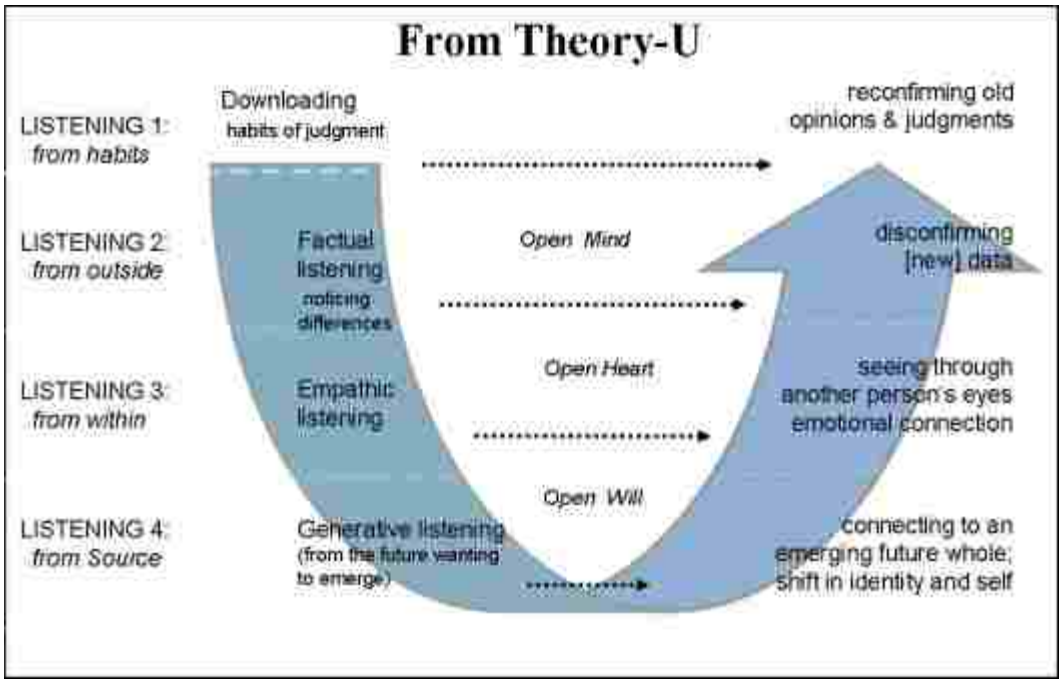
Some of the tools are: Mitigation Adaptation Information Network (MAIN) for sustainable communities is an ICT based network designed for exchange of information and experience, promoting innovation and knowledge , that helps to make correct choices for development or catching in and learning from failures early on. It is thus a tool for decision making and connects knowledge and policy makers and know-how and know-why with practitioners. Communities and partners working together shape good practice examples. The challenge here, as in many knowledge facilitation platforms, is how communities own the platform and ensure that there is a connect between knowledge systems trickling down and coming back from them.

The focus is on the rural areas in the beginning, which later escalates to the urban. Sharing knowledge and building skills for increasing resilience is also needed. However, nothing is black and white and care must be taken in the messages given. The process and criteria for developing the knowledge framework and the prototype messages should include:

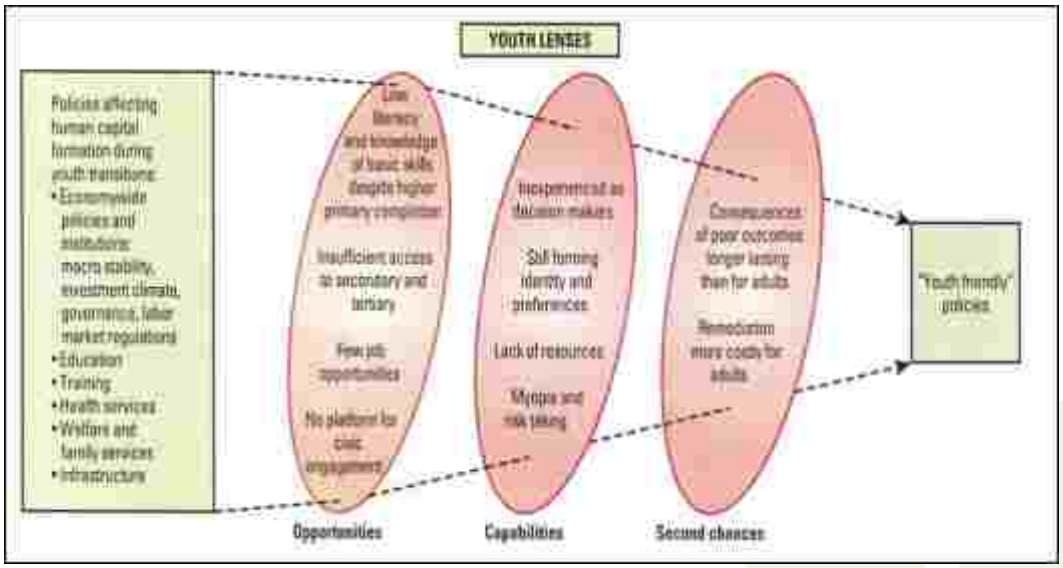
- **Is it relevant** - Does it matter to all the key stakeholders involved at all levels: individually (for the person involved), institutionally (for the organisations involved), and socially (for the communities involved).
- **Is it right** - Can you see the whole in the microcosm that you are focusing on? Get the dimensions of the problem or project definition right.
- **Is it revolutionary** - Is it new? Could it change the game? Does it change (some of) the root issues in the system?
- **Is it rapid** - Can you do it quickly?

- **Is it rough** - Can you do it on a small scale? Can you do it locally? Let the local context teach you how to get it right.
- **Is it relationally effective** - Does it leverage the strengths, competencies and possibilities of the existing networks and communities at hand?
- **Is it replicable** - Can you scale it?

And, like the natural systems it tries to emulate, it is cyclical in that it constantly improves through use and feed-back and improves the knowledge base while providing value in the form of decision support frameworks and workable solutions. The realism part of all this has to be put into perspective. It has to be made relevant and practical for the local people. Process tools are essential. One of these is the 'Theory U'.



Beyond the knowledge is then the issue of skills for Green Jobs. Unless skill creation is seen in a mission mode, opportunities will be lost and societies would lose at the end.



A job means the socio - economic transformation of the entire family. An experience from the Wadhwani Foundation describes how public sector funds contributed to set up training centres, training modules and pro-poor polices. The private sector provided forward linkages into jobs and an engagement with families - the parents and the youth with messages for mothers as in 'you would want a better life for your children', ensured a sustainable model. Transparency was maintained using ICT tools and ensuring there were no cash transactions. Impacts were seen in reduced dependence on money lenders as the youth, especially girls were employed and had a steady income. There was even a measurable reduction in migration. Keeping the focus on youth and job creation, the challenge is to ensure that new jobs are created 'green' and stay that way.

3.1.3. Markets and Institutions

The Yatra attempted to understand the role of markets and social institutions in promoting green economic growth through experiences from the renewable energy sector and mine rehabilitation processes. The decentralised bio-mass based energy – green energy - for promoting rural livelihoods has demonstrated small successes and is facing barriers in scale-up operations. In the Renewable energy sector market the questions one is asking are:

- Why have bio-mass, bio-gas, small hydro and pv - solar based renewable options and wind energy not taken off in a big way? Wind Energy has an installed base of 12,500 MW, whereas others' base is still in few hundred MW.
- What are the barriers and what can be done to overcome them and how to make these options take off?

Even though decentralised energy generation is the way to go forward and there is an acknowledged need to generate electricity in a sustainable manner, sell and make a profit in a sustainable manner, there are no scale-up operations. There are several reasons for this. In the Indian context, wind energy has had some success, as it was the biggest tax saving initiative and therefore the motive was not profit making, but tax saving. For solar, the government has introduced many checks and balances. It looks good on paper but the ground reality is different. Off grid technologies in general have not shaped up as per design. For grid connected systems, Solar thermal is not working well, but large bio mass energy generation has achieved some success.

Barriers to the process of renewable energy include lack of clarity on the enablers in terms of human resources, technology, products, skills and capacity building.

Some of the current issues involve supply and demand side issues; capacity building and training, management issues, regulatory issues, grid connected v/s off-grid technology issues, rural v/s urban and investor confidence. There is also the need for finding market hook - ups, which cross-subsidise the scale out, even while providing the services to target segments. Telecommunications is one such market hook. It is becoming more and more rural. It is the second largest user of diesel after transport. Just a 10 per cent reduction in energy price would increase its profit. Renewable energy can be used to anchor the load and can be a useful option. For example, the SPEED Programme uses the existing infrastructure to generate power for the telecom sector, while the surplus can be used to light rural areas.

There is thus a need to simultaneously work on the demand side and supply side issues. If we are looking for renewable energy scale up then we need to address bankability of projects and work on developing investor interest in green businesses in a market that is dependent on subsidies. In rural areas, there is also the need to invest in people and building capacities and awareness. Financial savings in rural sector being low and banking penetration even lower, revenue collection and tariffs would have to be delicately balanced. A weak and non-transparent regulatory framework can be further constrained by not having enough success stories; a classic case of chicken and egg and therefore sourcing development funds for 'demonstration effect' is a good idea. By encouraging 'catchment' markets and in this case, anchoring of the load management as in the SPEED programme ensures sustainability of operations.

The role of institutions, especially social institutions in shaping development and economic processes is well recognised, as it holds stakeholders together. This is because human behaviour patterns are governed by its institutions and institutions are shaped by their governance systems. It is important to take an objective view of social institutions and their development historically and understand their role in environmental and development processes.

In the present debate on building blocks for a green economy, the biological and historical perspective is missing in the big picture.

Since the world began, man has had a predisposition to intervene with the environment. In the early civilisations, the pace of growth ensured that there would be a replenishment of what human activity extracted from the environment. However, after the industrial revolution, the pace of human exploitation of the environment has increased and there is a growing gap in the replenishment of natural resources. This gap is what is frightening, and is the starting point of the debate on green development. Post 2008, the concept of the ecological foot print is being aggressively integrated within the economic frame, as by now it was not enough to talk about sustainable development as the gap became impossible to fill. The increasing gap means increasing complexity in the number of actors, stakeholders, states etc.

4. Stimulating Inclusive Growth: Green Investment as a Key Driver for Change

4.1 The Macro-Environment for Green Investment - Major Opportunities and Principal Barriers

Finance is one of the key drivers of any economy – the same holds good for green economies. The important questions are:

a. **Quantum**: The cost effectiveness of the finance available – is the scale adequate?

b. **Commercial considerations/Market**: Is there a market and hence are there adequate returns on the financial investments? Finance will only work if there are returns-- therefore there is a need for fiscal incentives e.g. discounted lending etc

c. **Awareness**: The financial community is unfamiliar with the concept of finance for green economy. It requires awareness and attitudinal change.

d. **Where do we get the required finance:** Is there is a capital funding available, are there subsidies? Is there a viability gap funding?

The above mentioned concept of a Green Economy started after the global economic crisis of 2008. So regulation is an important factor that would drive the investment in the green economic sector. The quantum of 'green bucks' has to be carefully monitored. However, "Green bucks do not necessarily bring about green economies" .

Green investments are needed for enhancing the scale. With the Equator Principle, the big banks will follow the IFC performance standards and these are de-facto focused in meeting environment and social standards. Getting the Investor view, however, is important for the scale operations because donor assistance/government spending will not take us too far.

The Lok Capital, for example, seeks to answer the following before investment decisions are made:

(i) Promoter Team
- Can we have a good working relationship for five years – will I have fun?
- Their motivation

(ii) Business Plan
- Focus on 2-3 years maximum.
- Focus on assumptions not numbers
- Complete execution focus

(iii) Scale is very attractive!

(iv) Piloting and some proof of concept can be useful

Coherent policies are required for enabling small and medium industries to access green technologies. Further, financial institutions need to work on incentives to finance green projects through instruments for risk sharing. Tax benefits clearly are important to drive green technologies initially, but the focus should be on win-win opportunities, as many stakeholders are against the additional costs that a green economy may imply because it may stand in the way of global competitiveness. A lot of effort is needed for networking and awareness creation within financial institutions. The Reserve Bank of India can formulate guidelines on green technologies and investments, detailing the role of banks for community groups and farmers.

Value chain perspectives are also essential for understanding green growth. Infodev for example, has come up with a study for climate innovation centres on green businesses. It enables ground initiatives to enter the space where investments exist. It includes incubating, risk capital and linking with other forms of money available.

Socially relevant business models are also needed because Green is likely to get missed out

of green investment just as social aspects were missed out initially from social business – this is because the concept is not clear and this could be a barrier to scale up operations . For fulfillment of the agenda, the penetration of micro finance to the social enterprises is crucial to take them forward.

However, if the metrics (the capacity involved) could be developed from day one, the green front can be maintained. Product diversification is also needed for micro finance. Once the market is started and is getting filled at the bottom, the level of the loans/products will increase.

Three billion tons of CO2 abatement opportunities exist, but to meet these targets, there is need for capital. Investing in these sectors/areas can be called green investment. Certain institutions have begun this. For example, IFC is dealing with the private sector directly and benefiting the bottom of the pyramid and working on climate change. There is a risk sharing facility in Sri Lanka for renewable energy options to help them invest and cover risks in case of eventualities. Each project that IFC does is towards environmental and social imperatives. There are funds that remain unutilised which are meant for the poor and for green economies, and should be tapped into as part of corporate governance. There is a need for policy directives on the utilisation of finance, measurement, time frame, matrix, instruments and institutional support needed to divert finance to green economies.

There is a discomfort in having energy as the only defining sector for Green Economy. The focus on resources and materials seems to be missing, e.g. on big paper companies and on farm forestry. Innovative opportunities must be explored for sectors beyond energy and Green House (GH), but right now that is where the market lies.

As people come out of poverty, it will cause further stress on natural resources, but this is where green investments can come in. In India, the GDP growth is projected to move upwards and a huge demand is foreseen for Urban Infrastructure. Water is vital for development and economic growth, especially due to population growth and urbanisation. There is a rising demand for food security, industrialisation and energy production. Water is also a crucial issue linked with climate change.

The mapping exercise to identify where Investment perspectives and sustainability perspectives were plotted gave the following indications. The x-axis looks at the investment perspective (which includes the India scenario and the global investment one) the y-axis looks at the sustainability perspective (which looks at inclusive social development and environment conservation.

- Investments are aimed at skill development, water, food, energy, housing, eco-system services, urban services e.g. waste management, health care
- Many of the examples were not obvious on why they were categorised as good investments, otherwise there obviously would have been investments in those areas
- From the investor perspective, they would like to know what kind of business model / plan is there for the good investments identified by participants
- There may have been a lack of clarity on certain examples like Renewable Energy (RE) and what is it that we want to do exactly in RE
- 80 per cent examples were coming in highly sustainable box
- Box 3.3 - areas of hope not necessarily areas of sustainability / feasibility

- This exercise should help to design enabling environment, define priority areas for investment
- The basic refinement required in the exercise is to look at returns over a period of time

4.2 Policy As a Key Enabler of Change

India has 1/15 of the Global economy, with 1/6 of the world population and around 77 per cent of whom spend less than Rs. 20 (i.e. less than 50 US$) per day . It has been observed that the global situation today is one of projected high economic growth and high population growth and increasing energy demand all in the face of climate change impacts. The energy demand is being met mostly by coal and oil leading to high emissions. There is also inefficiency in resource utilisation and in domestic material consumption of food water and shelter, despite, of the limited bio capacity of the land. The ecological footprint is fast surpassing the bio - capacity giving rise to a high ecological deficit. Food and financial crisis have hit the highest point in the last three years. Thus current development models are clearly not sustainable.

The need to explore different developmental sustainable pathways has been emphasised as 'Low carbon lifestyles for sustainable development' that would bring resilience to economies. Choices must be made to move towards low carbon and resource-efficient economies with investment in natural capital. This can be achieved by increasing investment in green jobs and enhancing the ecological share in the GDP, while decreasing energy and resource inefficiency, environmental cost and wasteful consumption.

The UNEP initiative looks at reshaping the economy through policies and the new finance mechanisms for the benefit of local people. There are good lessons from global policies e.g. China's circular model of industries and eco cities; Korea's Low Carbon green growth National Strategy with 80 per cent investment in green sector at the Prime Minister's initiative; Thailand's emission target for clean energy; Maldives' plan of going carbon neutral; Indonesia's REDD policy for climate change and people's benefits; and Singapore's Sustainable Singapore Mission.

With the mandate being investments in green technologies and bringing in livelihood security, there are new opportunities in research, markets, industrial changes, awareness, jobs, engagement and international governance. If the $8 trillion investment can be channelised towards green economy a lot could be achieved.

Policy action is necessary at various levels Global Frameworks Convention, National Policy Architecture and State Policy directives. National policies cannot be seen in isolation any more and they have to be connected to global frameworks, negotiations etc. Policies can regulate emission reduction and facilitate and encourage behaviour towards adaptation technology and poverty reduction.

There are many different actors in the policy arena, but a common link between different voices is absent as each has his/her own agenda. This can be resolved through participation and facilitation by civil society actors on neutral platforms and issues related to environmental governance can be addressed. This would ensure that there is the right technology at the right place and at the right time with the right ethics and right cost.

The mandate for the state is to create a dynamic policy framework with respect to context, location, execution and management entities separately and to address issues on policy framework and monitor the outcomes. Resource management and distribution including information in terms of access and reliability would have to be strengthened. The governance system also needs to be participatory and include communities, civil society organisations and corporate groups at the policy formulation stage itself.

The mandate for financial institutions is for moving towards inclusive growth by creating market interface using innovative funds. Whereas, the mandates for civil society are for setting up enterprises, business models, institutionalise local informal organisations and minimise risk, and the strategic challenge is to move from a position of despair to that of hope and identify which policies can enable the goal to be reached. A commitment to overcome

fragmentation in policies of the government is possible using dialogue cum action platforms.

Information sharing mechanisms are also needed in terms of transfer from the government to the people at the grassroots. There is a lot of government money for community groups, but a policy is needed for capacity building on the green components in all modules and to build awareness at the grassroots. A broad mapping of current polices to know the current status is required. The national policy should be able to facilitate the smooth working of NGOs and Community Based Organisations (CBOs) with the government with clearly defined roles acknowledged by both partners.

Policies should also ensure equitable distribution of resources between SMEs and the people at the grassroots and large businesses and industries which traditionally capture the majority share of resources. There are still 430 million people working in the informal sector. That is why diversity, maintained by the informal sector is essential for long term sustainability and this should be seen as a strength. However, the organisation of these informal groups is needed. The solutions for green economy may also lie outside the space of Green – for example in land rights. All this highlights the need to think outside the box and think of scalability. There is also a need to organise those who are organised and capitalise on their shared analysis and experience.

There is a gap between the people making the policies and the grassroots, i.e the people for whom the policies are made. It is therefore important that work from the grassroots feeds into policy because workers are the most affected and have to be included in the process.

For any people oriented strategy, there are two dangers: the industrial sector exploiting the people and the political groups trying to make it into a political agenda. The role of the government is very critical on the issue of green growth. Policy coherence is however a problem and changing it is a difficult task. In order to change government policy we may have to work as a shadow government. We need to find common grounds, common voices and work in such ways that the commonness should outweigh the differences.

Some clear Policy Recommendations emerged from the discussions. These are:

- **Issue of subsidy** – Transforming the subsidy into an incentive for performance – mechanisms that move away from subsidies towards those that lead to incentivizing performance
- **Public Procurement Policy that would lead to green growth** – Government as a large buyer has a huge tendency to buy from global players. Instead the government should buy locally
- **Market incubation of green solutions** – Technology and institutions that bring in both public and private players
- **Inclusion in the policy process** – Thus reorientation of the policy development process itself
- Gestation period of policy should also be considered
- **Pro poor green growth should be sold to the government** – In the form of low eco housing, and greening of the value chain

5. The Role of Youth and Yuva Yatra

The 'Yuva Yatra' or 'the Journey of the Youth' was included in the national dialogue in India as it was believed that the youth had an important role to play since they would be most affected by the decisions of today. A youth contingent, including mostly urban youth and few from rural areas had visited villages in Central India to see best practices in development. The idea was to not only sensitise the mostly urban youth to developmental issues of rural India, but also learn from their fresh perspectives and unbiased observations.

The relevance of the Yuva Yatra in the 'UN International Year of Youth' was mentioned in the context of giving direction to the power of the youth for ushering in change. Sensitising the urban youth, who are empowered and are increasingly making their voices heard at the policy level, to issues of rural India was felt to be an important nation building activity.

Youth Representatives of Yuva Yatra

The youth representatives shared their experience of TARAgram and Bundelkhand in a very innovative manner, whereby they portrayed themselves as extra-terrestrials, who had inadvertently crash-landed in Bundelkhand and recounted their observations of the three villages they had visited.

The representatives recounted how they gained first-hand experience of life in rural India and how it was a different and amazing experience for them. They learnt not only about the socio-economic conditions and the problems and developmental challenges of rural society but also about their perceptions, aspirations and initiatives. They gave a telling commentary on the specific and critical issues in each of the villages, such as water issues in Gopalpura, nutrition in Rampura and education in Madore. Promoting equity in economic growth and ensuring access to basic needs included shelter, food and water was observed to be of critical importance across all spaces. Some societal ills that were noticed by them included gender discrimination, child marriage, lack of education and health awareness and lack of adequate employment opportunities. They also witnessed the impact of climate change on the rural socio-economic fabric and some of the adaptive coping strategies and critical challenges were observed.

Some representatives recalled about how they were warmly welcomed into the homes of the villagers and how they realised that people everywhere share the same basic needs and aspirations. Some said that the experience had helped them discover themselves in some fundamental ways and changed their ways of thinking and living and awakened a sense of responsibility. They expressed their concern that the mistakes were evident in the way the cities in India have developed. The mistakes should not be repeated in the development of rural India and that rural development should be responsive to the aspirations of the local population.

The youth also fondly remembered the 'shramdaan' (voluntary service) they had provided to the cause of sustainable development of rural India.

A skit was presented by Radio Bundelkhand reporters highlighting how the community radio was empowering people through awareness.

TARAgram YATRA 2010

inspiring sustainability

Towards Green Economies

scalable solutions for people and our planet

Annexures

17-21 September 2010
Nehru Memorial Museum & Library, New Delhi
and
TARAgram Orchha, Madhya Pradesh


TARAgram
YATRA 2010
Inspiring sustainability


Bundelkhand - Humari Karmabhoomi


TARA

TARAgram YATRA 2010 - Agenda

Friday, 17 September 2010 (New Delhi)

Inaugural Session

Keynote Address by Dr. Ashok Khosla
Chairman, Development Alternatives,
President, International Union for Conservation of Nature and
President, Club of Rome

Overview Presentation
Immediate global challenges of poverty reduction and environmental regeneration
Low carbon pathways to create sustainable livelihoods on a global scale

Thematic Session
Panel discussion and audience interaction

Saturday, 18 - Monday, 20 September 2010 (Orchha, Madhya Pradesh)

TARAgram YATRA 2010
A journey into Bundelkhand, the rural heartland of India, combining first hand exposure to the challenges of poverty and environmental degradation with real life stories of change and cutting-edge discourse on alternative pathways to sustainable development

Introductory Session

Overview

Working Sessions

I Green Growth: Priority Sectors for Large Scale Impact

Sectoral Overviews highlighting global trends, major gaps, best practice, key influencing factors and high potential opportunities in

Renewable Energy
Sustainable Construction
Water Management
Waste Recycling
Sustainable Agriculture

Walk through TARAgram

Thematic presentation and panel discussion on Green Jobs

II Building Blocks for Green Growth

Presentations with systemic analyses highlighting global trends, stress points, path breaking initiatives and scalable models in the development of

Technology
Skills
Institutions, and
Markets

Field visits to habitat, energy, water, information services and local institution building initiatives

III Strategic Imperatives and Practical Solutions

Group work on priority goals, key capacity building tasks and immediate actions at the global level in BRIC nations and in least developed countries to promote sustainable technologies, education and vocational training, social empowerment and green business models

Thematic presentation and panel discussion on Adaptation for Livelihood Security

IV Stimulating Inclusive Growth: Green Investment as a Key Driver

Presentations on the macro-environment for Green Investment highlighting existing mechanisms, major opportunities and principal barriers.

Discussion on breakthrough initiatives to support green entrepreneurship and game changing possibilities for investment in high potential sectors

V Agenda for Stakeholder Action: Policy as a Key Enabler

Group work on policy orientation required to create enabling frameworks for green growth and new mandates for the state, private sector, financial institutions and civil society

Drafting of the TARAgram Declaration 2010

Tuesday, 21 September 2010 (New Delhi)

TARAgram YATRA 2010 Revealed

Thematic Session	**:**	**Youth for Action**
Plenary Session I	**:**	**TARAgram Yatra 2010 Revealed**
Plenary Session III	**:**	**Green Investment and Policy Imperatives**
Valedictory Session	**:**	Presentation of the "TARAgram Declaration 2010" Address by Chief Guest Passing the baton to Youth for Action

Noted Speakers and Yatris 2010

Professor Amitabh Kundu
Jawaharlal Nehru University

- Currently the chairperson of the Technical Advisory Committee on Housing Start up index at RBI and Committee to Estimate Shortage of Affordable Housing, Government of India, Professor Amitabh Kundu teaches at Jawaharlal Nehru University. He has been a member of National Statistical Commission Government of India. He was a Dean of the School of Social Sciences at JNU and Visiting Professor at Sciences Po, University of Amsterdam, University of Kaiserslautern etc.
  - **Development Research Work** - Professor Kundu was a Director at the National Institute of Urban Affairs, Indian Council of Social Science research and Gujarat Institute of Development Research.
  - **Published Work** – Prof. Kundu has has edited *India: Urban Poverty Report* and *India: Social Development*. He has prepared background papers on *India's Economic Growth and Inequality* for OECD and *Human Development Report 2009*.

Mr Amitava Basu
President, Intercontinental Consultants and Technocrats Private Ltd

- President, Intercontinental Consultants and Technocrats Private Ltd. (ICT), Mr Basu has a perfect blend of academics and practice, in respect to relationship between environment, infrastructure and economic growth.
  - **'Sustainability Reporting'** – Mr Basu has authored the book 'Sustainability Reporting' published by the Institute of Chartered Accountants of India. It is one of the pioneer publications in the country for sustainable development from an accounting point of view. Mr Basu has also presented papers at various national and international seminars and conferences on harmonisation of environment and economic growth.
  - **Academic Connection** – He has been a visiting faculty at the Xavier Labour Relations Institute (XLRI), Jamshedpur, a premier business school of the country. He is also associated with several other educational institutions.
  - **Institutional Reforms** – He has served different task forces and committees, set up by state governments for institutional reforms, including the committee set up by Government of India for determining prudential norms for the Indian Renewable Energy Development Agency (IREDA).
- **Education:** A post-graduate in Commerce from the University of Kolkata, he holds a Bachelors Degree in Law from the same University. Mr Basu is a Fellow Member of the Institute of Chartered Accountants of India.

Ms Anne Solgaard
Coordinator for the Green Economy Team, UNEP/GRID

- **Ms Solgaard** is associated with United Nations Environment Programme (UNEP/GRID-Arendal) located in Arendal, Norway, as a coordinator for the Green Economy Team.
  - **Work on Sustainability** - Before joining UNEP/GRID-Arendal, she worked as an independent consultant on design and learning for sustainability
  - **GRIP Association** - has worked with Green in Practice Forum for Development and

Environment, (GRIP) – the Norwegian Ministry of Environment

- **UNEP DTIE** – She has worked for several years as a project manager on sustainable consumption with the **UNEP** division of Technology, Industry and Economics (**DTIE**) in Paris

- **Education:** Ms Solgaard is MSc in Holistic Science from Schumacher College in Devon, UK.

Dr Arun Kumar

President – Business Initiatives,
Development Alternatives

- Dr Kumar is the President of Development Alternatives and has extensive experience in the areas of technology design, system engineering, business development and research.
  - **Specialisation** - He has worked in the areas of renewable energy technology design and development, systems engineering and business development and general management.
  - **Sustainable Technology Packages** - Since 1989, Dr Kumar has been involved in the development and liberation of sustainable technology packages in the areas of low-cost construction, decentralised energy production, clean and green technologies, biomass utilisation, paper recycling and other livelihoods technologies.
  - **DESI Power** - Under his leadership, the first DESI Power Biomass based Energy System was installed and commissioned at TARAgram, Orchha in 1996. The unit meets the entire electricity requirements of the Appropriate Technology Centre of Development Alternatives.
- **Education:** An engineer by Profession, Dr Kumar did his Ph.D from the University for Birmingham, England.

Mr Ashok B. Lall

Green Architect – Construction, India

- Principal of Ashok B. Lall, Architects, New Delhi Mr Lall executes projects for educational research institutions in many parts of India. The firm specialises in low energy sustainable architecture.
  - **Faculty Member** - Mr Lall was a visiting faculty member at School of Planning and Architecture, New Delhi from 1980-1990. He became a member of faculty at TVB School of Habitat Studies, New Delhi –Professor and Dean of Studies from 2000 to 2007. Since then he has been a Visiting Professor at the University School of Architecture and Planning (USAP), Guru Gobind Singh Indraprastha University, Delhi.
  - **Institutional Membership** - He is a Life Member of the Indian Institute of Architects- Associate Member Indian Society of Lighting Engineers- Member Network for Comfort and Energy use in Buildings- Member AA Asia- Member Indian Society for Heating, Refrigeration& Air-conditioning Engineers- Member INTBAU India Committee of Honour- Member.
  - **Public Service** - He has worked for Delhi Urban Art Commission - Convenor, Task Force for North Delhi Convenor, Task Force for Urban Villages Member Advisory Committee and Contributor- DUAC Exhibition "Imagining Delhi".(2006) Preparation of Conservation Development Plan- Khirki Village, New Delhi (with TVB School of Habitat Studies).
- **Education and training:** Mr Lall has a Bachelors degree in Architecture and Fine Arts from Cambridge University, UK. He has also got an Architectural Association Diploma from London, UK.

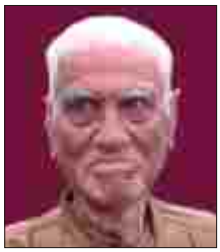
Dr Ashok Khosla

Chairman, Development Alternatives

- Dr Khosla founded and was president of the thirty-year-old Development Alternatives Group and now chairs its Board. Headquartered in New Delhi. The DA Group was among the first civil society organisations set up to address the issues of sustainable development as a whole. It also pioneered the concept of social enterprise, creating business-like approaches for eradicating poverty and conserving the natural resource base.
  - **Additional Charge** - Currently, Dr Khosla is president of the International Union for Conservation of Nature (IUCN), the world's largest and most representative alliance of conservation agencies and interest groups; co-president of the Club of Rome, a group dedicated to promoting systems-based strategic understanding of the world problematique and the human predicament; and co-chair of the Resource Panel, which has been set up by UNEP to investigate the status and trends of natural resource use in the global economy. Public Sector - In India, he has served on the National Security Advisory Board, the National Environment Board and the Science Advisory Council to the Cabinet and on the boards of many official, NGO and academic bodies.
  - **Global Footprint** - At the international level, Ashok has had several official assignments, such as Special Advisor to the Brundtland Commission (WCED), Chair of the '92 NGO Forum at the Earth Summit in Rio de Janeiro, and has served on the Boards of several environment and conservation organizations, including Chair of the Centre for Our Common Future, the Club of Rome and Energy Globe, and member of IISD, Stockholm Environment Institute, ZERI, the Alliance for a New Humanity, EXPO 2000, Toyota Environmental Awards.
  - **Work for Environment** - Globally, he helped to design and teach the first university course on the environment (as an assistant to Professor Roger Revelle at Harvard University, 1965); to set up and head the first governmental agency for the Environment in a developing country (under Prime Minister Indira Gandhi, 1972); to set up the original international information system on environment (Infoterra, with Maurice Strong at UNEP, 1976); and to establish the first social enterprise for sustainable development (Development Alternatives, 1982).

AVM (Rtd.) S. Sahni

Senior Advisor, Development Alternatives



- Senior Advisor at Development Alternatives, Air Vice Marshal S. Sahni has worked extensively on degraded lands, wastelands and has pioneered work on water-harvesting structures in the arid and semi-arid areas of Central India.
  - **Dhaincha Advantage** - He has lead the way for the use of Sesbania Biopinosa (Dhaincha) for increased soil fertility and making available raw materials viz seed and slew of Dhaincha. This has lead to increasing the income of farmers and employment of many rural people.
  - **Afforestation** - In 1987, AVM Sahni initiated the greening of two denuded hillocks on either side of Datia town with an area of approximately 238 acres through natural regeneration. He was instrumental in the greening of 150 acres of wasteland with high PH (saline alkaline) soil in the Semai and Sindhwani villages of the Datia district.
  - **Augmentation of Surface Water and Ground Water** - Under his guidance, 126 small, medium and large check dams have been constructed in the Bundelkhand region. These check dams play a key role in revolutionising the economy of the land, which is traditionally semi-arid, marked by drought-like conditions.
- **Education:** He graduated from Benaras Hindu University and after a distinguished career in the Indian Air Force, where he served the Ministry of Agriculture on deputation as Director of Agricultural Aviation, he decided to devote the rest of his life for the betterment of the Bundelkhand area.

Mr Bimal Jalan

- Bimal Jalan was Governor of the Reserve Bank of India from 1997 to 2003 and a nominated member of Rajya Sabha in Parliament from 2003-2009.
  - Finance Secretary and Chairman of the Economic Advisory Council to Prime Minister.
  - He also represented India on the Boards of the International Monetary Fund (IMF) and the World Bank.
  - Bimal Jalan has been associated with a number of academic institutions, including the Indian Statistical Institute, Kolkata, the Institute of Economic Growth, Delhi as Chairman and National Council of Applied Economic Research, New Delhi as President.
  - He is currently chairman of Centre for Development Studies, Thiruvananthapuram.
- **Education:** Bimal Jalan was educated at Calcutta, Cambridge and Oxford Universities.
- **Publications:** India's Economic Crisis: The Way Ahead (1991), India's Economic Policy: Preparing for the Twenty-first Century (1996), India's Economy in the New Millennium (2002), the Future of India: Politics, Economics and Governance (2005), and India Politics: A view from the Backbench (2007).

Mr B.M.S Rathore

Indian Forest Service

Mr Rathore is an IFS officer belonging to the 1982 batch of the Indian Forest Services from Madhya Pradesh Cadre.

He has extensive experience in the field of participatory forestry, biodiversity conservation, tribal development and issues related to climate change. He has worked with government agencies, research & training Institutions, NGOs, community institutions, Panchayat Raj Institutions, and international agencies such as UNDP, FAO, Ford Foundation, ICEF, IFAD and DFID. Has been the recipient of the "Indira Priyadarshini Vraksha Mitra Award" for community based forest management in 1992. He received the State Governments' Gold Medal for professional excellence in forestry in 1990 for community based wasteland regeneration programme.

Recently he has been posted as Joint Secretary in the Ministry of Environment and Forests and has been assigned portfolio of IFS cadre management, Environmental Education, e-governance , Green India Mission and the country focal point for United Nations Environment Programme (UNEP), IUCN & ICIMOD.

Mr Deepak Gupta

Secretary, Ministry of New & Renewable Energy (MNRE), India

Mr Gupta belongs to Jharkhand Cadre 1974 batch of the Indian Administrative Service.

A post-graduate in History from St. Stephen's College, Delhi and M.Phil in International Relations from Jawaharlal Nehru University, he did Masters in Public Administration from the Kennedy School, Harvard University in 1992 as a Mason Fellow.

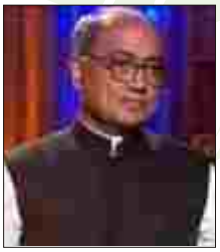
After under taking several district level assignments in Bihar, he spent several years in different departments covering almost all areas of work in both State Government and the Government of India. His assignments included a stint as Adviser (Jute & Coir) at India Trade Centre, Brussels during 1983-85.

He spent almost a decade as Joint/Additional/Special Secretary, Ministry of Health & Family Welfare from 1998 to 2008, as well as a year with the World Health Organisation in Delhi as Adviser in 2004.

Presently, Mr. Gupta is Secretary to the Government of India in the Ministry of New & Renewable Energy since July, 2008.

Shri Digvijay Singh

General Secretary , All India Congress



Digvijay Singh is a senior member of the All India Congress Party.

Mr Singh was the Chief Minister of Madhya Pradesh for two five-year terms. He first elected the Chief Minister of the state on December 7, 1993 and continued to hold the post till Congress was voted out of power in the November 2003. He was a state Cabinet Minister in the ministry of Shri Arjun Singh in Madhya Pradesh from 1980-1984.

He was recently named in the list of the 10 most powerful politicians in the United Progressive Alliance(UPA). Digvijay Singh is credited with the recent revival of the Congress Party in Uttar Pradesh, where it emerged as the single largest party in the 2009 Lok Sabha Elections.

He has been awarded with Param Vishisht Seva Medal by the President of India in recognition of his exceptional and distinguished services.

Educational Qualifications: He received an engineering degree from G.S. Institute of Technology, Indore.

Mr George C. Varughese

President, Development Alternatives

- As the president of the Development Alternatives, Mr Varughese has undertaken the task of building a trans-disciplinary group, capable of addressing issues related to environment and sustainable development. He has coordinated or actively participated in nearly all the assignments undertaken by this group.
  - **Environment and Development** - Mr Varughese has nearly two decades of experience in various facets of environment and development, including activities related to national and international policy formulation, technical support to programmes and projects, conducting training programmes, building partnerships and managing large-scale field programmes, involving community participation.
  - **Areas of Expertise** - His areas of expertise include Programme Planning and Management, Institutional Design, Regional Environmental Planning, Environment Impact Assessment; Natural Resource Management, Information Systems Management, Policy Formulation and Construction Management.
- **Education:** Mr Varughese has a Masters degree in Urban & Regional Planning and a bachelors in civil engineering.

Dr Harendra Sharan

Dr Sharan grew up in northern Bihar, one of the India's poorest regions.

After a R&D career in the power technology field with a Swiss company (Sulzer), he joined one of the largest power equipment companies in the developing world (BHEL, India).

Dr. Sharan's current focus includes the definition of policy changes necessary in the North and the South to cope with the impending climatic catastrophe, and the implementation of renewable energies to make the world's collective future sustainable.

- **Education:** He has a degree in mechanical engineering from Bihar Institute of Technology (India), and a Ph.D in combustion and heat transfer from the University of Manchester (UK).

Mr Hernan Blanco

Freelance consultant

- Currently a free-lance consultant, Mr Blanco has over 20-years of experience in environmental and sustainable development issues. He offers consultancy services to private companies (mining, forest, fisheries and cement sectors) on issues related to social responsibility, public participation and conflict management.
  - **Founder of RIDES** - Mr Blanco co-founded RIDES, a research-based NGO in Chile in the year 2002.
  - **Major Applied Research Projects** - He has extensive experience on major applied research projects. He directed a sub-global Millennium Ecosystem Assessment project in northern Chile and co-ordinated the Mining Minerals and Sustainable Development initiative in South America.
  - **International Author** - Mr Blanco has authored numerous international and national papers and books. He is the lead co-ordinator author for one of the chapters of the forthcoming handbook on Ecosystem Assessments, Island Press. He is part of the Green Economy Coalition.
- **Education:** He is a hydraulic and environmental engineer and holds an M.Phil in environment and development from the University of Cambridge (UK).

Mr Kalikesh Narayan Singh Deo

Honourable Member of Parliament

- Elected as the youngest member of the Orissa state Assembly, Mr Singh Deo is currently the Member of Parliament from Bolangir. He was a member of the Public Accounts Committee and Energy Committee. Elected to the House in 2004 at the age of 29, he won from Saintala Assembly Constituency which was previously held by the Indian National Congress.
  - **Royal Link** - Hailing from the royal family of Bolangir, Orissa, Mr Kalikesh Narayan Singh Deo's political pedigree stems from his high profile Minister father Au Singh Deo and great grandfather RN Singh Deo - the former Chief Minister of Orissa.
  - **Sports Background** - He is an avid sportsman and has represented India in shooting and basketball.
- **Education:** He is a graduate in economics from St. Stephen's College, Delhi University.

Dr K Vijay Lakshmi

Vice President, Development Alternatives

- A recipient of the National Award for **Women's Development through Application of Science and Technology**, Dr Vijaylakshmi has extensive experience in environmental management and has designed solutions for the brown issues of the environment i.e., air, water and land pollution.
  - **PAC Connection** - She is a member, Program Advisory Committee (PAC) for Department of Science and Technology Schemes S&T Application for Weaker sections (STAWS).
  - **Major Publications** - Some of her publications are Reducing vehicular pollution in Delhi, Position paper from DA for Transport department, Government of NCT Delhi (prepared for a World Bank-sponsored workshop); Climate change mitigation potential: Exploring the unexplored. Development Alternatives Newsletter. 10 (11). 2000 Nov. Pp. 7-8.
- **Education:** Dr Vijay Lakshmi is a Ph.D in Physical Organic Chemistry.

Ms Kiran Sharma

Vice President, Development Alternatives

- Vice President of Development Alternatives, Ms Sharma is presently heading the Development Solution Branch of DA, which is the implementation arm of the organisation.
  - **Civil Society Programmes** - She has over 20-years of experience in the management of a vast range of national level civil society programmes in the areas of poverty eradication, women's health, HIV/AIDS, gender empowerment and women's rights, integrated child development, child labour, education etc.
  - **Poorest Areas Civil Society Programme** - Ms Sharma was responsible for managing Poorest Areas Civil Society Programme. She has managed many civil society programmes implemented across several regions, through large partner and technical resource networks.

Dr Kirit S. Parikh

Chairman, Expert Group for Low Carbon Strategy for Inclusive Growth, Planning Commission of India

- Widely recognised as the architect of India's Integrated Energy Policy Committee, he was honoured with **Padma Bhushan** by the President of India in March 2009. He is also a Fellow of the National Academy of Sciences, India and honorary life member of the International Association of Agricultural Economists.
  - **Economic Advisory Council** - He was a Member of the Economic Advisory Council (EAC) of five Prime Ministers of India, Atal Behari Vajpayee, P.V. Narasimha Rao, Chandra Shekhar, V.P.Singh and Rajiv Gandhi.
  - **Awards and Decorations** - He was honoured as the most distinguished and illustrious alumni of the decade from India by the Massachusetts Institute of Technology (MIT), USA in September, 2007. He was conferred the Distinguished Alumnus Award by Indian Institute of Technology (IIT), Kharagpur in September, 2007. In 1978 he was given the "Vikram Sarabhai Award" for Systems Analysis and Management. He was honoured with "Visveswaraya Award" by the Engineers' Foundation in Kolhapur in 1999. He is also a recipient of "Nayudamma Award" for contribution to the welfare of mankind through developments in the fields of Economics and Energy in February 2005.
  - **(IGIDR) Connection** - He was the founder Director (Vice Chancellor), Indira Gandhi Institute of Development Research (IGIDR), Mumbai – An Advanced Research Institute from 1986 till 2000. In 1997-98, on sabbatical leave from the IGIDR, he was Special Economic Adviser to the Administrator, United Nations Development Programme (UNDP), New York.
  - **Author** - Dr Parikh has authored, co-authored and edited 27 books in the areas of development planning and policy concerning poverty, energy, environment, trade and general equilibrium modeling. He has also published numerous articles.
- **Education:** Dr Kirit S. Parikh has a Doctorate of Science in Civil Engineering and a Masters Degree in Economics from MIT, USA. He has been a Professor of Economics since 1967.

Mr Mandar Parasnis

Environment Specialist, International Finance Corporation

- An Environment Specialist in the Investment Support Group of Environment and Social Department (CES) of International Finance Corporation (IFC), Mr Parasnis works on environmental and social aspects of new investments and compliance monitoring of the portfolio investments.

- **Environmental Management** - He has nearly 20 years of international experience on environmental management related projects - primarily in East and South Asia.
- **Freelance Experience** - he has worked as a freelance environmental management consultant for various international organisations such as United Nations Environment Programme (UNEP), Asian Productivity Organisation, International Green Purchasing Network etc.
- **Far-East Connection** - During 1995-2005, Mr Mandar lived and worked in Thailand and Japan with numerous international organisations in the region.

- **Education:** Mr Mandar is a Civil Engineer with a Masters degree in Environmental Science and Engineering from Indian Institute of Technology, (IIT) Mumbai.

Ms Marcella D Souza

Executive Director, Watershed Organisation Trust

- More than 15 years' experience with Watershed Organisation Trust (WOTR), an NGO undertaking holistic and integrated developmental activities for poverty reduction in resource-fragile and rain-fed areas in India.
  - **Adaptation to Climate Change through Sustainable Livelihoods** - Initiated project to empower clusters of rural villages in rain-fed ecosystems to adapt to climate change (being implemented in 25 villages in rain-fed Maharashtra).
  - **Wasundhara Approach** - Innovated approach on equity and gender inclusion in watershed and development projects (won the Kyoto World Water Grand Prize - 2009).
  - **Sampada Trust** – Set up a sister organisation that addresses micro-credit, entrepreneurship development, micro-insurance and women's empowerment.
  - **Sanjeevani Institute of Empowerment and Development** (SIED) – Set up a sister organisation for direct implementation
- **Education:** She is passed out from Harvard School of Public Health, Nagpur Medical College

Ms Meera Shenoy

consultant, World Bank

- Meera Shenoy, consultant World Bank, works in the field of training and linking vulnerable youth to jobs. Her current focus is to help companies become "inclusive" by hiring disabled, SC and ST rural, underprivileged youth.
  - **Executive Director** of an Andhra Pradesh government mission of the rural development department, which she helped set up from scratch. Today, it has grown to become one of the largest Jobs mission for the poor having trained 280,000 youth and placed 75 per cent of the youth in jobs ranging from retailing to rural BPOs.
  - **Knowledge at Wharton and the Wall Street Journa**l featured, her several awards including the South Asia Manthan award for e-inclusion. She has given many presentations at National and International seminars.
  - **World Bank** works as their expert in the field of Youth and employment, in Bihar, Bangladesh and Sri Lanka. Her other passions are the green movement and travel. Her previous work experience is in the corporate world, and media, both print and television.

Mr Michel Anglade

Regional Campaigns & Policy Manager, Oxfam GB

- Michel Anglade is the Regional Programme Manager (Policy and Campaigns) where he coordinates Oxfam's work on climate change in South Asia, including piloting innovative adaptation programmes in Bangladesh and in Nepal.
  - **Sustainable Development** - He is currently developing a regional campaign and programme on "Food Justice in a resource constrained world"
  - **Development and Humanitarian** practitioner with over 15 years of experience in Asia and in Africa. He also managed emergency responses in Sudan, Somalia, Sierra Leone and Liberia.
  - **Field of Policy and Advocacy**, co-ordinator for Oxfam's policy work in West Africa and now in South Asia.
- **Education:** Michel is a graduate from the Paris Political Sciences Institute and holds a Masters degree from the Paris Business School.

Prof. Mridula Mukherjee

Director, Nehru Memorial Museum and Library

- An eminent historian, Professor Mukherjee is the Director of Nehru Memorial Museum and Library, Teen Murti Bhawan. She is a Professor of Modern Indian History and the Chairperson of the Centre for Historical Studies, Jawaharlal Nehru University, New Delhi.
  - **Visiting Faculty -** She has been a visiting Professor at Duke University, USA, and twice at the Institute of Oriental Culture, University of Tokyo. Recently she was a Visiting Fellow at the Institute of Advanced Studies, Nantes, France.
  - **Publications** - Her publications include India's Struggle for Independence (1988), India after Independence 1947-2000 (2000), India Since Independence (2007) both co-authored, and Peasants in India's Non-Violent Revolution: Practice and Theory (2004). She has co-edited, 'Selected Works of Jawaharlal Nehru' and 'Sage Series in Modern Indian History', a series published by Sage Publications.
  - **Upgradation of NMML** - Under her visionary leadership Ministry of Culture has entrusted Nehru Memorial Museum and Library with a task of modernisation and upgradation, which is currently being implemented.
- **Education:** Prof. Mukherjee was educated at Lady Sri Ram College, Delhi University and Jawaharlal Nehru University.

Mr Mukul Sanwal

Former Policy Advisor (UNFCCC)

Mr Sanwal joined the Indian Administrative Service in 1971 and served in various policy positions in the Government of India, including heading the divisions for pollution control, hazardous waste management, policy and law and international co-operation.

He was the principal negotiator at the UNCED, Agenda 21 and the Climate Change Treaty. He joined the United Nations as Policy Adviser to the Executive Director of the UNEP in 1993, and later moved in the same position to the UNFCCC Secretariat.

His current research interests center around strategies for institutional reform in the UN, innovative means to support international cooperation, and the development of partnerships between governments, private sector and local communities for environmentally sustainable economic growth.

He has written extensively on sustainable development, global environmental management and environmental law.

Ms Naina Shah

Environmentalist, Entrepreneur & Businesswoman

Presently director of E'Arth Vision, CEO of MHS Enterprises, Director, Paradigm Environmental Strategies(P) Ltd, a consulting firm implementing sustainable developmental project, which is eco-friendly. It undertakes consultancy in the field of optimisation of the utilisation of resources and conservation of Environment. Currently she has been chosen as the Solid Waste Management Expert under JNNURM for five cities such as Shimla, Raipur, Kochi, Varanasi and Nasik.

Editor of the magazine 'Water Today', Vice President of Exnora International, Advisor for Protecterra Ecological Foundation, IYCN and Managing Trustee of Sarvodaya International Trust, Naina Shah has been an environmentalist since long before the word became fashionable. An expert in solid waste management (SWM), eco-sanitation and various other eco friendly measures, Naina is on various international, as well as national panels and committees. Additional to having been keynote speaker and resource person on several occasions, she has made a presentation to the President of India, His Excellency A P J Abdul Kalam, on Exnora's contribution on decentralised SWM. Ms Shah is also the president of Soroptomists International, Chennai Down Town and is part of several women's organisations.

Mr Niranjan Khatri, General Manager

Welcomenviron Initiatives, ITC WelcomGroup

Mr Khatri has a hotel management background and has had operational experience as the General Manager of several ITC Welcomgroup hotels.

Mr Khatri is credited with pioneering the concept of eco designing in Welcomgroup Bay Island in Port Blair, Travel House and Landbase India Ltd. His hands on experience culminated in a paper to ILO/Cornell University on eco-designing. He was invited by CII to Head their Renewable Energy cell for one year. His eco-rating for the Delhi Government has been distributed to 1200 schools and translated into Marathi & further distributed to 6000 schools.

He has been taking sessions for IIT-Delhi and Mumbai, Delhi University, XLRI, S.P. Jain, MDI and also the CII, FICCI, PHD, Assocham on eco designing. He has been the convener of the Water Committee of CII, Delhi council and is currently member of the Power and Water Committee of CII Northern region. He is also Member of Arunim, an arm of Ministry of Social Justice looking at issues of persons with multiple disabilities. He also served as a non-executive director in Central Electronics Ltd for five years.

He is the recipient of the prestigious Hellan Kellar Award 2006.

Mr Prabhjot Sodhi

Senior Programme Director, CEE

- Mr Sodhi has been associated with the Centre for Environment Education (CEE) for the past eight years as the National Coordinator for the Global Environment Facility (GEF), United Nations Development Programme (UNDP) and Small Grants Programme (SGP).
  - **Western India Rainfed Farming Project** - While in KRIBHCO, he has managed a project on renewable natural resources management in over 300 villages in the tribal regions of Western India in collaboration with the Department for International Development (DFID), United Kingdom and the Government of India (GOI).
  - **Tribal Development in India** - Mr Sodhi was honoured with the `Most Excellent Order of the Member of British Empire' for his contributions in the Tribal Development in India under Bilateral Grants-in-Aid project in India
  - **`Certificate of Merit'** - He was awarded the `Certificate of Merit' in 1996 and 2001 for his contributions towards the Village Communities' Tribal Livelihoods Programmes in the western parts of India.

- **Education:** Mr Sodhi has done B.Sc from Punjab University and has an MBA degree. He has done a course in Sustainable Development, Development Policy from University of Wales Swansea, United Kingdom.

Ms Prishani Satyapal

Vice President Environment and Community Affairs Ghana

- Ms Prishani is currently Vice President at the Environment and Community Affairs of Anglogold Ashanti in Ghana. She has worked in the areas of both social and environmental corporate responsibility and accountability since 1994.
  - Her remit in Ghana includes the development and implementation of an integrated strategy to address the company's legacy impacts on the environment and host communities, while creating a zero harm platform for a positive future legacy.
  - Her work with Anglogold includes the co-management of a group-wide climate change study and involvement in the development of a post-graduate diploma for community and environment practitioners in the mining industry (with the University of Cape Town's Graduate School of Business).
  - **The Sustainable Business Solutions Team**: Prior to AngloGold Ashanti, Ms Satyapal worked, for eight years, in the Sustainable Business Solutions team at PriceWaterhouseCoopers in Johannesburg. She was part of the core team that established the business unit that served East and Southern African clients in sustainability strategy, reporting and also non-financial assurance.
  - Ms Satyapal previous roles include the responsibility for review and support of the Community Affairs teams of Anglogold Ashanti's Africa operations. Also Ms Satyapal represented the company on the board of the National Business Initiative in South Africa and the World Bank supported Communities and Artisanal Mining Working Group.
- **Education:** Ms Satyapal has a Masters of Science degree in Responsibility and Business Practice from the University of Bath, in England. She is currently enrolled as a Ph.D candidate at the University of Cape Town, where her research focuses on mining companies and adaptation to climate change.

Mr Ramesh Jalan

Resource Person and Moderator
Solutions Exchange, UNDP

- Mr Jalan works as a Resource Person and Moderator of the Climate Change Community of Practice, Solution Exchange, United Nations to leverage knowledge to meet the Millennium Development Goals (MDGs) and also the goals of the national five year plans
  - **Renewable energy** - over 25 years experience in renewable energy, waste to energy, environment and energy audits, energy efficiency, sustainable habitat, water etc.
  - **The UNIDO connection** - Prior to joining Solution Exchange, worked as a National Programme Officer at the United Nations Industrial Development Organisation (UNIDO) looking after energy, environment and climate change projects.
- **Education:** Ph.D in Environmental Engineering with a focus on Municipal Solid Waste Management from IIT, Delhi.

Mr Ranjit Kumar Swain

Director, Chale Chalo

- Mr Swain is currently the Director of Chale Chalo, a leading NGO in Orissa. He is responsible for looking after the day to day management, right-based issues and development activities of the organisation.
  - **Development Consultant** - He is also a Development Consultant,

Developing Concept Notes, Project Proposals, Project Design, Project Planning, Monitoring, Evaluation, Report Writing and Documentation etc. He offers Project and Campaign Management Guidance related to Women Empowerment, Strengthening Grassroots Democracy and Good Governance, Poverty Reduction, Livelihoods Promotion, Environment Education, Community Based Mangrove Forest Regeneration & Management and Community Radio etc.

- **Work for Community Development** – He has worked as Programme Associate for VIKALPA/RCDC, Bolangir, Conducting study on Coounity Forest management of the region. Me Swain was also a Project Director of AGGRAGAMEE, Kashipur, looking after development programs like -Innovative Schools, Community Grain Banks, Women SHGs, and Tribal Health, Tribal Livelihoods and Micro Watershed Development projects in Thakurmunda block of Mayurbhanja district. Additionally, he has also worked for Sahabhagi Vikash Abhiyan (SVA) – Khariar, Nuapada, an organization dedicated to Implementing and Monitoring the Capacity Building Programmes for West Orissa CBOs in Nuapada, Bolangir, Kalahandi and Bargarh districts.

- **Education:** Mr Swain has a Masters degree in Economics from Utikal University. He has also done a Vani Vihar P.G. Diploma in Rural Development from Indira Gandhi National Open University. Mr Swain is also trained in Participatory Micro Watershed Management, Participatory Planning for Micro Watershed Management, Management of Voluntary Organisations, Panchayati Raj and Micro Village Level Planning, Documentation especially on Writing, Designing and Producing Various Reports etc.

Mr Robert H. Donkers

Minister Counsellor for Environment at the Delegation of the European Union to India.

Posted in New Delhi, he also covers Bhutan and Nepal.

From October 2003 until 1 September 2007, he was the first Counsellor for Environmental Affairs at the Delegation of the European Commission in Washington, DC, USA.

From April 1999 until October 2003, he served as Head and Deputy Head of the Chemicals Department in the Directorate General Environment in Brussels, where his responsibilities included the coordination of the development of a new EU Chemicals policy and legislative framework, better known as REACH. He also was the chief EU negotiator on the 2001 Stockholm Convention on Persistent Organic Pollutants (POPs).

He is also co-author of 'Towards Sustainability', which is the European Union 5th Environment Action Programme (1992-2000).

Before joining the Commission in 1990, Mr Donkers held several positions in the Dutch Administration, including Deputy Head of the International Environmental Affairs Department in the Dutch Environment Ministry and EU Environment Counsellor for the Kingdom of the Netherlands in Brussels.

He holds a Masters degree in Environmental Economics and a Masters degree in Public and International Law from the Erasmus University Rotterdam, The Netherlands.

Sir Richard Stagg

High Commissioner for Great Britain

- Sir Stagg has been British High Commissioner to India since September 2007.
  - **On Foreign Turf** - On joining the Foreign Office, Sir Stagg worked in the Department responsible for Hong Kong – on his second day the Hong Kong Police mutinied, adding to the challenge of managing Britain's last major overseas territory.

He then spent three years in Bulgaria under the Communists and a further three years in the Netherlands at a time when the country was in uproar over the planned deployment of US missiles.

- **European Council** - Sir Richard was seconded to the Secretariat of the European Council to help establish a new organisation, designed to coordinate more effectively the foreign policy of the members of the EU. He returned to London to work on policy towards the Soviet Union in the three years leading up to its collapse and the liberation of Eastern Europe – the goal of our policy for the previous four decades.
- **Enlargement of the EU** - From 1996-1998, Sir Stagg was the head of the Foreign Office Department responsible for the Enlargement of the EU – negotiations with 10 candidate countries were started in early 1998 under the UK's Presidency of the EU. He also negotiated, with the EU Commission, an EU/US agreement to end the threat of the US imposing extraterritorial sanctions on EU companies trading with Cuba, Iran and Libya.
- **The Kosovo War** - Sir Richard was appointed British Ambassador to Bulgaria in 1998 and served there for three years during the war over the future of Kosovo. During his posting Bulgaria joined NATO. He left shortly after the election which, in a bizarre twist, saw the former infant King elected as Prime Minister.

- **Education:** Sir Richard Stagg was educated at Winchester College and Oriel College, Oxford.

Mr Sanjay Vashist

Progamme Advisor, Climate Change

Sanjay Vashist is advising Climate Change Programme of Heinrich Böll Foundation in India since February 2009 and directing Climate Action Network in South Asia (CANSA).

Prior to it he worked with TERI as Climate Change expert. He also worked as International Coordinator for Climate Action Network International (CANI) in Bonn, Germany coordinating the activities of ENGOs network also acting as focal point for ENGOs constituency of observers under UNFCCC

Education: He is a graduate and Post Graduate in Forestry from India. He completed his Masters in Agro Forestry from Gujarat Agriculture University and Graduation in Forestry from Konkan Krishi Vidhyapeeth, Maharastra.

Mr Sanjay Khazanchi

Executive Director, D.E.S.I Power

- Mr Khazanchi is currently working as the Executive Director with **D.E.S.I Power** (Decentralized Energy Systems India Pvt. Ltd.) with 24 years of experience in various Industries - Energy, Power, Auto Components and Industrial & Auto Emissions.
  - **Deeya Energy, Birla Power and Omax Auto** - C.E.O and Regional Director & Country Manager (South Asia and Middle East) for Corning Incorporated.
  - **Clean Air technology** and various new and renewable energy solutions for power generation and energy management.
  - **RaySun Power**, consulting organization providing services in the field of Renewable Energy, Mergers and Acquisition and Turnaround Management.
- **Education:** A post graduate in Management from FMS, Delhi University and Mechanical Engineer from REC Srinagar.

Dr Shantanu Mitra

Team Leader for Climate Change and Development in the Department for International Development

Shantanu Mitra has worked for the UK Department For International Development (DFID) mainly as an economic adviser on international economics issues and on bilateral programmes in India, Bangladesh, Indonesia and Vietnam. More recently he has taken up management roles, as Head of DFID's Indonesia office, before moving in 2008 to his current position as Team Leader for Climate Change and Development in DFID, India. Before joining DFID, he worked as a researcher in development economics, and as an economist in the UK government Department of Health.

He leads the Department's engagement with India on climate change, working closely with the central and state governments, research institutions, civil societies, private sector, donors and other UK Government ministries to support the development of strategies and policies addressing the interface between climate change and poverty.

Mr Shrashtant Patara

Vice President, Development Alternatives Group,
Chief Operating Officer, TARA and Chief Executive,
TARA Livelihood Academy

- Mr Patara has been with Development Alternatives since 1988 providing research expertise, management capability and strategic direction to teams of up to 60 persons working in the areas of Habitat, Energy and Livelihood Support Systems; managing programmes aimed at fulfilling basic needs and empowering people, particularly women and youth through enhanced livelihood security.
  - **Sustainable Building Technology -** Mr Patara has experience in sustainable building materials and technology, micro-enterprise development, rural market development and management of large donor funded programmes. These include a range of clean technology and enterprise development initiatives, such as the dissemination of Micro Concrete Roofing Technology in India, capacity building for promotion of Vertical Shaft Brick Kiln technology, development of housing and clean energy service delivery models for rural households, along with the coordination of several post-disaster reconstruction projects.
  - **Capacity Building Approach** - He has extensive field experience and strategic insights into capacity building approaches and service delivery mechanisms that are directed towards regeneration of the environment and greater social equity. His commitment to capacity building within the development sector is now focussed on training services through the recently launched TARA Livelihood Academy – a DA Group initiative to extend enterprise development services and create green jobs on a large scale.
  - **Process Moderator** - Mr Patara is a qualified group process moderator, at the forefront of facilitating the evolution of institutional networks, aimed at promoting sustainable practices and policy change. He coordinates the Green Jobs Initiative across the Development Alternatives Group, under which he is currently managing a flagship project, supported by the International Labour Organisation on creation of Green Jobs in selected sub-sectors of the Indian economy.
- **Education:** Mr Patara has a degree in Architecture from the School of Planning and Architecture, New Delhi.

Mr S. Parthasarthy

(Retd) Secretary, Govt. of India

- S. Parthasarthy, IAS (RETD.), Former Assistant Director General, ICRISAT
  - Retired civil servant. Joined IAS in 1965 and retired in 2002. During the last seven years of the civil service career (1995-2002) functioned as Assistant Director General, ICRISAT

- Post retirement, he worked as advisor and subsequently as Managing Director, MOTHER DAIRY FRUIT AND VEGETABLE. LTD, a wholly owned subsidiary of NDDB which he is currently a director.
- In 2006, he was the Chairman of the Technical Committee appointed by the Ministry of Rural Development, Government of India and submitted a report reviewing Watershed Development programme in the country including a set of new guidelines.

Ms Snehlata Nath

Founder Director, Keystone Foundation

- Ms Nath is the founder director of Keystone Foundation, an organisation for on eco-development of the indigenous people in the Nilgiri Biosphere Reserves in southern India.
  - **Keystone Activities** - Conservation, livelihoods and enterprise form the backbone of Keystone's activities.
  - **Traditional Agriculture** - As Director, Programme, Ms Nath has worked extensively on agriculture and non-timber forest produce and their role in the livelihoods of the indigenous people.
  - **Green Business Initiatives** - Keystone has a green business initiative and Ms Nath plays a key role in designing and product development. She is also the president of the network on Non-Timber Forest Products *(NTFPs) spread across south and south-east Asia.

Mr Tom Bigg

Head of Partnerships, International Institute for Environment and Development

- Mr Bigg is Head of Partnerships at the UK-based International Institute for Environment and Development
  - **Profile** - he manages organisation's relations with donor agencies and develops institutional strategies and related future planning.
  - **IIED Involvement** - He has co-ordinated IIED's involvement with the 2002 World Summit on Sustainable Development, the 2005 Millennium Review Summit and a range of other international processes.
  - **Author** - He has published two books and a number of papers on aspects of sustainable development and international governance issues.
- **Education:** Mr Bigg is a Ph.D in International Relations

Mr V. K. JAIN

IPS (RETD.)

Mr V K JAIN, IPS (RETD.), a retired IPS Officer (1958) of Uttar Pradesh Cadre, was the Director General of Police in Uttar Pradesh

Thereafter he held various important portfolios including the offices of the Special Secretary (ISP), the Home Ministry, Special Secretary, the Department of J&K Affair, Government of India and a Member National Security Advisory Board.

He is currently a Member of National Disaster Management Authority.

Dr Veena Joshi

Team Leader
Swiss Agency for Development & Cooperation

- Dr Joshi is the team leader of Rural Energy & Housing, Swiss Agency for Development and Cooperation (SDC) in New Delhi. She has vast experience in rural energy development and indoor air pollution issues
  - **Training Programmes** - Dr Joshi has developed and conducted

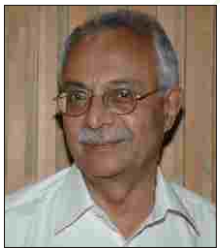
training programmes and seminars for senior officers of Indian Administrative Service and the public sector units.

- **Research Interests** - Dr Joshi's main research interests are related to biomass-based cooking stoves, biomass resources, rural energy planning and implementation issues, and air pollution issues in general.

- **Education:** She did her Ph.D in air pollution from the Indian Institute of Technology, Kanpur.

Mr Vijay Padaki

Head, P&P Group



- **ATIRA Background** - Mr Padaki started his career with the Human Resources Division of Ahmedabad Textile Industry's Research Association (ATIRA). As the head of the Human Resources Division, he was instrumental in the development of the new Indian Institute of Management in Ahmedabad during its formative years. He was also a member of the founding faculty of Indian Institute of Management, Bangalore.
  - **The P&P Group Association** - He co-founded the P&P Group, a research and consulting centre, specialising in organisation and institutional development.
  - **Dramatics** - Mr Padaki is actively involved in theatre, especially in writing and training. He has a long association with the Bangalore-based Little Theatre. He has authored over 30 plays, and won the *The Hindu* Award for contemporary playwriting in 1993.
- **Education:** Mr Padaki is a social and clinical psychologist by training. He completed his education and professional training from the Chennai University and the India Institute of Mental Health, Bangalore (now NIMHANS).

Dr Vishaka Hidellage

Regional Director, Practical Action South Asia

- Working as the Regional Director of Practical Action South Asia office, Dr Hidellage provides effective leadership to the South Asia Programme.
  - **Decentralised Agro-processing** - Involved in identifying, modifying, testing and demonstrating a number of technologies, suitable for decentralised agro-processing options through pilot projects. The lessons learnt were shared internationally and locally.
  - **Post Tsunami Initiatives** - Played a key role in planning and implementing the Post Tsunami Rebuilding Programme in Sri Lanka. Is also closely associated with the 'Reducing Vulnerability Programme' of the organisation, which looks at disaster mitigation and natural resource management.
  - **International memberships** - A member of the Steering Group; Global Network for Disaster Risk Reduction; (UNISDR, Geneva), ISDR Asia Partnership, Sri Lanka Water Partnership; (IWMI) , NGOs Water Supply & Sanitation Decade Service & Consortium of Humanitarian Agencies (CHA).
- **Education:** Ph.D in Food Science/Economics from the Post Graduate Institute of Agriculture, University of Peradeniya - Sri Lanka.

Mr Vishal Mehta

Co-founder & Managing Director, Lok Advisory Services

- Mr Mehta led the fund raising, investments and portfolio strategy function at Lok Capital which started the operations in India in late 2004
  - **Lok Capital** is one of the first social Venture Capitals focused on India and backed by institutional investors that are targeting have close to $100 Million of assets under management by mid-2011.
  - **Financial Services and Telecom Sector**: Over 8 years of

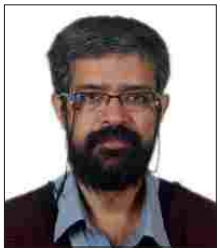
experience in delivering marketing and business development services both in developed as well as developing economies.

- **Capital One**: Worked with issuers of credit cards in US, Siemens in India, Malaysia and Germany and with PRTM, a management consulting firm in US
- **Advisor Social Projects** - India and Kenya.

- **Education:** Mr Mehta holds an Engineering degree from Delhi University and an MBA from the University of Michigan, Ann Arbor.

Mr Vishwanath Srikantaiah

Director, Biome Environmental Services Pvt. Ltd



- Director, Biome Environmental Services Pvt. Ltd, he has spent the last eight years working on urban water issues, especially rainwater harvesting, gray water reuse, ecological sanitation systems and sustainable water management issues.
  - **Work in Rural areas** - He has worked on drinking water solutions in the Fluoride affected rural areas along with coming up with ecological sanitation systems, poly-houses with rainwater harvesting systems, ground water recharge systems and integrated rural water management systems.
  - **Founder Advisor, Rainwater Club** - Mr Srikantaiah is associated with Arghyam - a trust providing grants for water and sanitation projects in India and running the India Water Portal www.indiawaterportal.org.
  - **The IRCSA Connection** - He is the Secretary General of International Rainwater Catchment Systems Association (IRCSA), a global organisation of rainwater academics and professionals since 26 years.
- **Education:** Mr Srikantaiah has done civil engineering from Mysore University. He has also done Post Graduate diplomas in Urban and Regional Planning and Urban Environmental Management.

Ms Zeenat Niazi

Senior Programme Director- Habitat, Development Alternatives

- Ms Niazi has over 18 years' experience in the field of habitat processes and housing technology involving women construction workers, masons and women self-help groups.
  - **Habitat Processes** - She has managed, coordinated and built capacities in several projects for the design of habitat processes in both normal and post disaster situations; and dissemination of large scale environmental-friendly housing technologies in rural and urban areas.
  - **National Rural Housing and Habitat Policy** - She was instrumental in the development of the first national rural housing and habitat policy for India in association with the **basin**-*South Asia* Network, Poorest Areas Civil Society Programme Network and the Ministry of Rural Development, Government of India.
- **Education:** She did Bachelors of Architecture from the School of Planning and Architecture, New Delhi and followed it with a Masters degree from the McGill University, Montreal - Canada.

Presentations

Day I - 17th Sept 2010

Session I: Immediate global challenges of poverty reduction and environmental regeneration

Efficiency, Equity, Empowerment

The missing variables in the sustainability equation

TARAgram Yatra

Delhi and Bundelkhand, 17-21 September 2010

Ashok Khosla
Development Alternatives

For more details: http://taragramyatra.org/day1.aspx

For more details: http://taragramyatra.org/day2.aspx

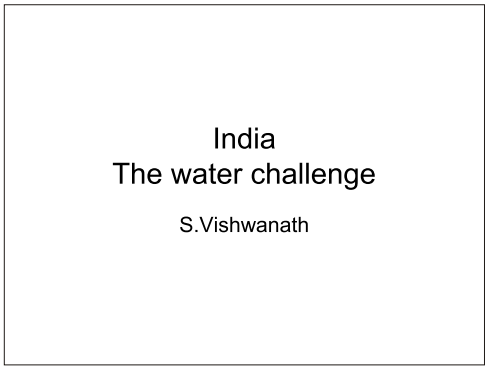
Day II - 18th Sept 2010

Session I : Green Growth: Priority Sectors for Large Scale Impact

For more details:
http://taragramyatra.org/day2.aspx

For more details:
http://taragramyatra.org/day2.aspx

For more details:
http://taragramyatra.org/day2.aspx



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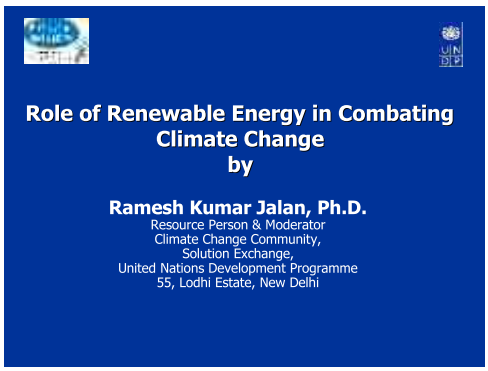

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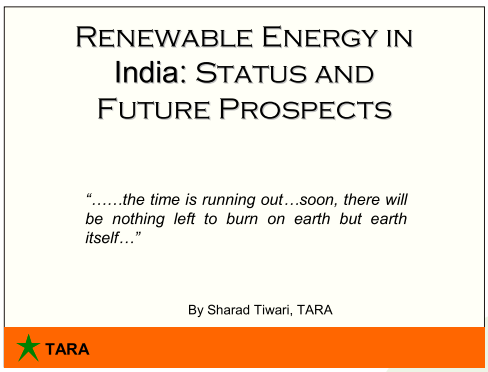

For more details:
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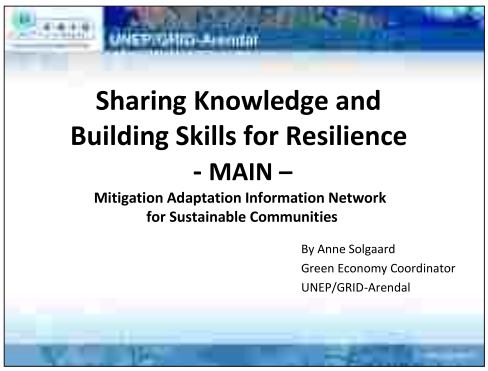
Day III - 19th Sept 2010

Session III: Building Blocks for Green Growth



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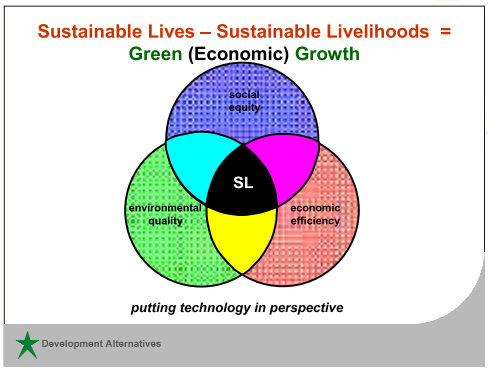

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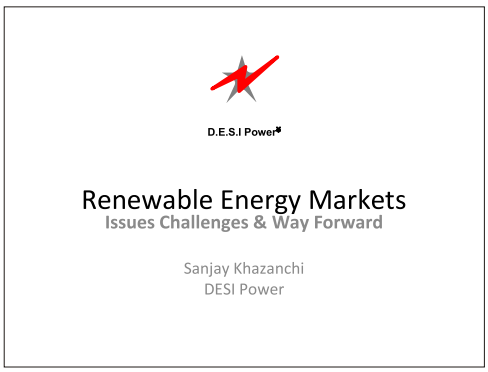

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Day IV - 20th Sept 2010

Session III: Adaptation for Livelihood Security

For more details:
http://taragramyatra.org/day4.aspx

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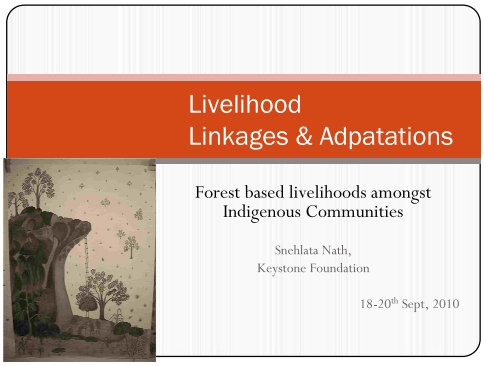

For more details:
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Day IV - 20th Sept 2010

Session IV: Stimulating Inclusive Growth - Green Investment as a key driver

For more details:
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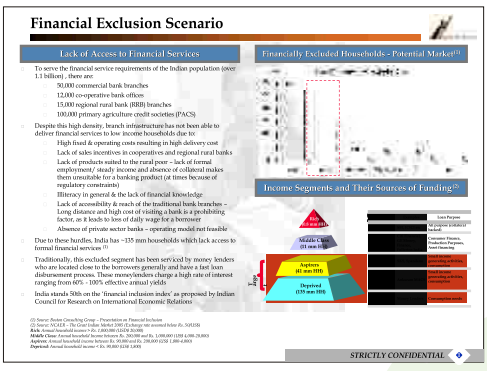

For more details:
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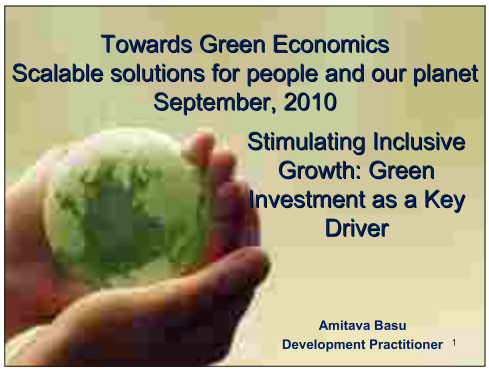
Day IV - 20th Sept 2010

Session IV: Stimulating Inclusive Growth - Green Investment as a key driver



For more details:
http://taragramyatra.org/day4.aspx

Day IV - 20th Sept 2010

Session V: Agenda for Stakeholder Action: Policy as a Key Enabler

Policy Orientation to create **enabling framework** for **green growth**: **new mandates** for the **state, private sector, financial institutions and civil society….**

Prabhjot Sodhi
NC GEF/UNDP SGP, CEE
New Delhi

For more details:
http://taragramyatra.org/day4.aspx

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For more details:
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Green Economy in South America (building up from MDG7)

Hernan Blanco
Orcha, 20 September 2010

For more details:
http://taragramyatra.org/day4.aspx

For more details about theme papers: www.taragramyatra.org


TARA
YATRA 2010

TARAgram YATRA 2010

inspiring sustainability

Towards Green Economies

scalable solutions for people and our planet

Our Partners and Sponsors

17-21 September 2010
Nehru Memorial Museum & Library, New Delhi
and
TARAgram Orchha, Madhya Pradesh

Our Partners and Sponsors

The Green Economy Coalition (GEC)

The Green Economy Coalition, founded in 2009 in Switzerland and hosted by IIED, has members from the environment, development, business, labour and consumer sectors. The focus is on policy changes for a clean, green and equitable global economy.

Website: www.greeneconomycoalition.org.

The International Institute for Environment and Development (IIED)

IIED is an independent international research organisation working with some of the world's most vulnerable people with a mission to build a fairer, more sustainable world.

Website: www.iied.org

The RING Alliance for Policy Research Institutions

RING, founded in 1991, is an alliance of 13 policy research organisations promoting sustainable development through research, dissemination and policy advocacy.

Website: www.ring-alliance.org

The Ministry of Environment and Forests

The Ministry of Environment & Forests (MoEF) is the nodal agency in the administrative structure of the Central Government for the planning, promotion, co-ordination and overseeing the implementation of India's environmental and forestry policies and programmes.

Website: www.moef.nic.in

The Department of Science and Technology, Government of India

The Department of Science & Technology plays a pivotal role in promotion of science & technology in the country. Its activities range from promoting high-end basic research and development of cutting-edge technologies to servicing technological requirements of the common man through development of appropriate skills and technologies.

Website: www.dst.gov.in

The Nehru Memorial Museum and Library (NMML)

NMML instituted as a tribute to Jawaharlal Nehru (1889 - 1964), is an autonomous institution under the Government of India. Located in the majestic Teen Murti House, the official residence of the first Prime Minister of India, it has a Memorial Museum, a Library on modern India, a Centre for Contemporary Studies and a Planetarium.

Website: www.nehrumemorial.com

UNEP/GRID-Arendal

UNEP/GRID-Arendal is an official United Nations Environment Programme (UNEP) collaborating centre located in Arendal, Norway with out posted offices in Ottawa and Stockholm. GRID-Arendal's mission is to provide environmental information, capacity building services and innovative communication tools, methodologies and products for information management and outreach. GRID-Arendal seeks to make credible, science-based knowledge understandable to the public and to decision-makers.

Website: www.grida.no

Heinrich Böll Foundation

The Heinrich Böll Foundation is a non-profit organization striving to promote democracy, civil society, human rights, international understanding and a healthy environment internationally. The Heinrich Böll Foundation is affiliated with the German Green Party. Headquartered in Berlin.

Website: www.boell.org or www.boell-india.org

Ministry for New and Renewable Energy

The Ministry for New and Renewable Energy has been set up to facilitate research, design, development, manufacture and deployment of new and renewable energy systems/devices for transportation, portable and stationary applications in rural, urban, industrial and commercial sectors.

Website: www.mnre.nic.in

The Ministry of External Affairs

The Ministry of External Affairs (MEA) is the foreign ministry of India. It is the Indian government agency responsible for the foreign relations of India.

Website: www.mea.nic.in

The Tata Steel

The Tata Steel Group has always believed that mutual benefit of countries, corporations and communities is the most effective route to growth. Tata Steel has not limited its operations and businesses within India but has built an imposing presence around the globe as well.

Website: www.tatasteel.com

ACC

Established in 1936, ACC Limited is India's foremost cement manufacturing company with a countrywide network of factories and marketing offices. A pioneer in cement and concrete technology, ACC is one of the first companies in the country to include environment protection as a corporate objective.

Website: www.acclimited.com

The KIIT University

KIIT School of Rural Management(KSRM)
…school for change managers

KSRM's vision is to strive to become a leading global academic institution in the field of Rural Management and show the path of eradicating rural backwardness.

Website: www.ksrm.ac.in

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Ministry of Science & Technology

Government of India
Ministry of External Affairs

Government of India
Ministry of New & Renewable Energy

जहाँ है हरियाली।
वहाँ है खुशहाली॥
MINISTRY OF ENVIRONMENT & FORESTS
GOVERNMENT OF INDIA

Nehru Memorial Museum & Library

ACC

KBiT

TATA
TATA STEEL

UNEP GRID ARENDAL
Environmental Knowledge for Change

Inaugural of TARAgram Yatra 2010

Release of TARAgram Yatra 2010 declaration

For further information please contact:

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