**CHALLENGE OF RURAL DEVELOPMENT**

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**Social ground realities:**

Open up a newspaper any day and we are flooded with a very depressing information highlighting greed, corruption, crime, rapes, poverty, food insecurity, hunger, malnutrition, unemployment, riots, public protests over non-deliveries by the governmental machinery, disillusion over the promises of politicians, etc that now dominate our social life. These problems are compounded with other issues like civil wars, terrorism and upsurge against authoritarian governments in some more unfortunate countries. Such social disorder is of general observation in poor countries as well as developing countries of the world including fast growing economies. Most of these countries are highly populated and majority of their population is concentrated in the rural areas. What is basically common in these countries is the absence of sustainable livelihoods and lack of access to good education, better health and sanitary conditions for the majority of people. In the absence of these basic facilities, which are fundamental to individual and social development, there is continuous exodus of people migrating from rural areas to urban areas of the world and resulting into urban chaos as the local governmental agencies are failing to provide amenities to continuous inflow of migrating population.

**Two faces of developing economics**

The countries like Brazil, Russia, India, China and South Africa - clubbed as BASICS - are on the track of fast growing economies as they have registered significantly very high annual GDP growth rates in the recent years; this trend has prevailed even in the period of economic recession that has gripped most of the countries of the world. China has surpassed Japan by attaining a position of a third largest economy and aiming at beating in the next two decades even USA, the first largest economy in the world. Brazil and South Africa have registered highest economic growth rates in the last decade among the countries of the continents they belong to; however, irrespective of this economic shining, these are the two countries which show extreme inequalities between richest and poorest strata of the populations as reflected in their *Gini* indices. Hence, generation of wealth has not resulted in a judicious distribution of wealth and creation of equal opportunities for development among their poor strata of the population. This situation of economic equality is now resulted in mafia raj in the urban centres of Brazil and socio-economic crimes in South Africa. In all these countries of economically fast track, the economic growth is not linked to employment creation due to type of technologies adopted as an engine for development which are orientated to reducing manpower engagement to achieve cutting edge benefits of economic competitiveness in their industrial sectors where only skilled and highly qualified personnel have role to play, thus excluding a large number of unskilled labour component.

Hence, these countries are now faced with two realities - at one, the booming urban centres with increased number of billionaires and millionaires and emerging middle class which are garnering all the benefits of economic development and at the other, the glooming rural areas with poverty stricken, hopeless and hapless poor devoid of even basic amenities of life. These are the two faces of growing economics, today.

There is now a talk of inclusive growth but that has not yet manifested in policy decisions or in their implementation.

**Interlinked Polycrises**

The world is now heading towards a set of converging challenges taking place on a number “fronts” which are together referred to as polycrises. These polycrises are now being manifested in the form of oil peak, biodiversity loss, ecosystem degradation and untamed exploitation of natural resources, growing food crisis, unchecked urbanization, rapidly growing populations, financial crises, socio-economic inequalities, likely impact of climate change, etc. Look at this global scenario: 925 million people were reported to be suffering from hunger in 2010; 1.3 billion people are living in poverty; 50000 people die every day due to poverty related causes; 10 million children die of hunger or preventable diseases annually; 1.2 billion people do not have access to adequate water source; richest 20% of the society account for 86% of consumption expenditure; 1% of the income of world’s rich equals that of 57% of the world’ poor; 16 out of 20 major ecosystems of the world have been exploited unsustainably; >2 global hectares is the ecological footprint per person against available biocapacity of <2 global hectares; 38% of all agricultural land has already been degraded besides 21 % of permanent pastures and 18% of forests and woodlands.

Each of the polycrises will have a profound impact on the society, but their cumulative and knock-out effects will be quite drastic.

**Socio-economic and ecological situations in South Africa**

The issues of food security and providing sustainable livelihood opportunities have become more crucial to South Africa in the context of poverty, unemployment, economic inequality, crimes and health issues. The upper 10 % of the society holds 44.7 % of the wealth while lower 10% has the access to only 1.3 % of the wealth; poverty stands at 50% of the total population of which 70 % is concentrated in rural areas with nearly half of them live chronic poverty; 70 % of the population has been urbanized; 25 % of the people are unemployed; 17.8 % people suffer from HIV/AIDs and crime rate is very high.

Out of the total land area of 122.3 million ha, 100.7 million ha is an arable, cropland or grazing land; however, only 13 % of this arable land is suitable for crop production. The soils of South Africa are mostly shallow and very fragile; they are subjected to high rates of wind as well as water erosion and 25 % of the top soil has been already lost in the turn of last century. The total annual rain fall of the country ranges from 500 - 700 mm and only 10% of the crop land is under irrigation. It is important to note that irrigation consumes about 70% of the available fresh water. Hence, in the realm of growing population and urbanization, there will be stress over the water demand which is a scarce commodity in South Africa. Since soil and water are the two major natural resources essential for growing crops, meeting food security of the people in future will be a great challenge. South Africa has already become a net importer of food in 2008 and relies heavily on the imports of wheat rice and animal feed. Any steep hike in food prices as was experienced all over the world during 2008-2009 leads to a miserable situation for the poor families as almost more than half of their monthly budget is spent on procuring food.

Most of the land area of South Africa is barren with only 7.6 % of the geographical area of South Africa is under forest cover and only 19.1 % is considered as primary forest attributed with high biodiversity and with carbon-dense form. The land under vegetation offers many ecosystem services essential for all forms of life. South Africa falls under the major Biodiversity hotpots of the world; however, some of them are under threat and demands protection. Hence, conservation of natural resources is a quite a challenge in South Africa alike other developing countries of the world.

In the face of these issues, it will be a daunting task to create sustainable livelihoods in the rural areas, besides creating opportunities for improvement for improvement in the quality of life, to be reflected in the form of improvement in education and health facilities as well as other aspects of rural development. At the same time serious attention needs to be paid to conservation of natural resources in order to ensure ecosystem services offered by them.

We are now encountered with two types of erosions – The socioeconomic erosion and ecological erosion as discussed above. The real question is whether we can address these two types of challenges together and still meet an objective of ensuring sustainable livelihoods for the people, especially those located in the rural areas. In other words, can we get the permanent livelihood for the people with an improved quality life through engaging them in building up nature’s capital? There are two case studies - one form India and another from Columbia - which distinctly show that this is possible through active involvement of local communities.

**Story of *‘Hiware Bazar’***

Hiware bazaar is a small village located in the western part of the State of Maharashtra in India. In 1990, it had a population of about 1250 with total of 180 families which mostly comprised of small farmers tending their lands under dry land condition and thus relying on the blessings on the monsoon. The annual rainfall in the area was quite low ranging between 350 to 400 mm. The village was surrounded by hills which were completely barren due to continuous felling of the trees for the purpose of using the logs as domestic fuel. The village also used to suffer from water scarcity which used to be quite severe during summer as open dug wells and bore wells would get dried up. The crop productivity was low as the cropping season was dependant on limitations of monsoon and governed by its erratic behaviour; more than half the families were, therefore, living below poverty line.

The period between 1972 and 1989 experienced severe droughts and many people were compelled to migrate to neighbouring towns in search of the livelihoods. Those who were left back in the village, struggled and ultimately took over to the easiest course of livelihood means – the production and sale of homemade liquor. Many of them became addict to liquor; one evil led to another and the village ultimately got caught up in the grip of crimes. This grave situation continued for some time and then elders in the village started worrying about the state of future generations and felt a need for the change. They ultimately decided to seek a help of a very promising youth who was a native of the village but went to a neighbouring city to attain higher education and secured a good job. In this youth, they found a passion for change and a leadership quality. Hence, they approached and requested him to lead the village and thus began a story of transformation.

It started in 1990 with construction of school building in the village where the villagers contributed their share in terms of cash, kind or labour whichever was possible for them. It was a kind of first community efforts and in fact a test of their joint involvement in a social cause. It was followed by the work of soil and water conservation measures and greening of barren lands surrounding the village which created lasting impact on their living conditions. The soil erosion and rain water runoff were arrested through their joint efforts by putting up contour trenches and bunds and plugging of gullies across the slopes of hills. A massive programme of greening of the hills was then started and during a span of 10 years between 1990 and 2000, about 90000 trees were planted and their survival ensured.

This physical transformation of lands surrounding the village was also coupled with organizational changes. All the decisions concerning village d3velopment were to be taken jointly concurring the opinions of all the resident families. Three rules were jointly made and approved: no liquor consumption, no felling of trees and no open grazing. As a result of restriction of open grazing, the grass in the community land grew luxuriantly and resulted in its abundant availability. It was decided that each family would get one head of grass free of cost every day to be used as a fodder for the dairy animals like cows and buffalos. But for extra head loads, the families were required to pay a mutually decided amount that was to be deposited in the village development fund. Abundance availability of grass led to enhanced dairy activity which was in the domain of rural women; in a decade of the transformation, the milk production rose from 300 litres per day to 2000 litres. This resulted in economic empowerment of women. As a result of soil conservation and rain water harvesting measures undertaken in the surroundings, there was a substantial increase in the ground water levels. Even though this situation resulted in ample water availability, the villagrs decided not grow high water consumptive crops like sugarcane and banana although such crops would have fetched more money; they restricted to cultivation cereals, pulses, vegetables and fruits like pomegranate. Marketing of the produce to the nearby town was also a joint cooperative effort. These economic activities started improving the economic conditions of the families and by 2003 all the families of the village were brought above poverty line.

The economic transformation was then followed by improvement in quality of life. Since every family had now owned 4-5 cattle, the villagers opted for installation of family size units of biogas plants to be fed with the available dung. Every house was provided with toilets and had an access to safe drinking water which improved the sanitary and health conditions of the people. The village committee also looked into improving the quality of education provided to children in the village school.

The economic and social transformation brought about in the village through community action and attainment of improvement in the quality of life has attracted the attention of families which earlier left the village in search of livelihood opportunities in the towns and they decided to come back. Hence, the out migration got reversed into in migration. Development of Hiwre bazaar has become exemplary for many of the villages in India which drew inspiration for the sustainable development.

**Story of ‘*Graviotas’***

Gaviotas is a village of about 200 people in Colombia, South America. In the early 1970s, a unique community was founded in the los llanos region of Colombia. For three decades, Gaviotans - peasants, scientists, artists, and former street kids - have struggled to build an oasis of imagination and sustainability in the remote, barren savannas of eastern Colombia, an area ravaged by political terror. Located north of the Amazon rain forest, this region is an expansive savannah, sparsely populated and generally considered uninhabitable. The water quality of the water available for drinking was so poor that the villagers were suffering from gastro-intestinal diseases.

Gaviotas originated out of the belief that the current state of urban expansion and poverty and the continued depletion of natural non-renewable resources could not be sustained and that the future required people to learn how to live in harsh, inhospitable environments and to do so in an ecologically sound and sustainable manner. It’s a story of a remarkable and diverse group of individuals (engineers, biologists, botanists, agriculturists, sociologists, musicians, artists, doctors, teachers, and students) who helped the village evolve into a very real, socially viable, and self-sufficient community for the future.

The story started with a dream of **Paolo Lugari,** a Colombia developer, who in 1960's while on a road trip through the country, stopped at an abandoned parcel of land and imagined an entire village before his eyes. The land was so poor and the area so remote - "visitors" had to pass Guerrilla check points or fly in to make it there - that no one wanted to live there. Mr. Lugari was in his very early 20's at the time. He wanted to find one of the hardest places to live and see if he could make it work. This was before the [oil crisis](http://planetgreen.discovery.com/work-connect/oil-crisis-focus-earth.html) of the 70's, but even then he knew fuel and other resources would be scarce.

The work started with plantation of pine trees at the rate of about 1000 trees per hectare. In a span of almost 10 years, about 8000 hectares of land was brought under the tree cover. After five years of plantation, the pine vegetation was subjected to thinning by removing about 500 improperly developed trees and replacing them with 100 palm oil trees per hectare. After proper establishment of palm trees, they started yielding palm oil which was converted into biodiesel and its sale in the open market provided a new source of income generation. It is praiseworthy to note that even though the community was producing biodiesel and selling it into market, it decided not to use it for own consumption like fuelling a car or motorbike; instead the people decided to use bicycles as a mode of transport.

Within a short span of establishment of these plantations, a significant enhancement of biodiversity started emerging with ultimately reaching to a level of about 250 life forms represented by a variety of plant, animal, insects and bird species. A natural process of addition of annual litter to the ground resulted in filtering of rain water sipping into ground. This had brought about a change in the pH of ground water from earlier acidic state to a neutral state, thus making it hygienically safe for drinking. The addition of canopy cover and established of tree strands also helped in seeping of about 18 % additional water in the ground than it used be before the intervention was made. The community then decided to pump out this additional increment of pure water at the rate of 1 M3 (= 1000 litres) per hectare; they started bottling and selling water into the market which provided them a second source of sustainable income. Through these two income generating activities, people in the village got permanent livelihood source.

In the last 30 years, they have now planted millions of trees, thus regenerating an indigenous rainforest. They farm organically and use wind and solar power. Every family enjoys free housing, community meals, and schooling. There are no weapons, no police, no jail. There is no mayor. The United Nations named the village a model of sustainable development. Gabriel Garcia Marquez has called founder Paolo Lugari the "Inventor of the world."

The people of Gaviotas today produce innovative technologies (solar collectors, irrigation systems, windmills, and hydroponic gardens) that use the environment without depleting or destroying it. While some of their creative endeavours have not succeeded, even the failures tend to spawn ideas for future successes.

**Role of appropriate technologies in rural development**

As seen earlier, sophisticated high capital intensive technologies were used as a driving force to attain high economic growth in economically fast developing countries; however these technologies have not proved to be of any use in generating employment on mass scale to absorb unskilled majority of people; in fact, they were aimed at getting rid of jobs of such people in the name of achieving financial efficiency. In the context of rural development, instead of technologies which replace the people, we need the ones which engage people. Hence, there is a specific role for application of technologies which can be appropriated to the needs of local communities and fit into social and environmental milieu. These appropriate technologies could be eco-friendly, low capital intensive, easy to be adopted and designed to offer skills to local people for increasing their working efficiency, reducing human drudgery, providing new avenues of income generation and improving the quality of their life. Such technologies are relevant in different sectors of rural life like housing, economic and sustainable water use, organic waste management, domestic fuel, renewable energy needs, sanitation, agriculture, agro-forestry, livestock management, etc. Therefore, a thrust is required for generation and dissemination of such technologies to rural areas as well as creation of a cadre of rural youth who can apply these technologies in the villages and this would account for opening new avenues of income generation as well as entrepreneurship development.

**Challenges in rural development**

Two stories narrated here clearly show that long term sustainable livelihood opportunities coupled with improved quality of life can be sought at village level by engaging rural population in building up nature’s capital and through judicious use of natural resources. Although a path towards to sustainable rural development could be distinctly charted, there are many stumbling blocks over the path. The big challenge is how to imbibe in the minds of people a clear concept of what is sustainable development and how to motivate them to initiate action. There is also an issue of developing local leadership and arousing a community spirit among the people. So far, there has been over reliance of the people on the local, provincial and national governments to bring about changes in their lives and so the expectations from the government machinery for appropriate deliveries are very high. Hence, a lot of social engineering would be required to bring about changes in the attitudes of the people. There is a wide scope for capacity development of the people at individual, social, organizational, technological and management levels. At the same time, there is a need on the part of civil society to pressurise political machinery to evolve a political will so as to bring about change in the policies at government level to support such people oriented development.

There is a dire need and a wide scope for such development in South Africa in order to address social disorder of the day and attain bright future for the people; the question is how and when such an alternate path would be trodden.

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