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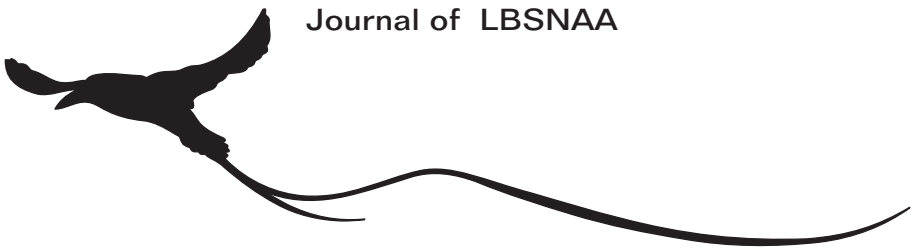

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A Fresh Approach To Agricultural Policy

Ajeya Kallam *

Context

The agricultural sector is at cross roads today. A stagnant agricultural sector has been a cause of concern for the economy for over two decades in the sense that the rate of growth of contribution of agricultural sector to the economy has actually fallen in recent times. A high GDP growth can be achieved and sustained only if the farm incomes rise and farmers share of consumer-rupee raises with increased farm level returns through higher yield, remunerative prices and reduced transaction costs. Thus, more than ever before, revised strategies are to be evolved in agriculture sector.

In the last 50 years, the primary objectives of public policy relating to this sector has been achievement of self sufficiency in basic foods, low and stable food prices and improved opportunities for the poorer classes to participate in the growth processes. No doubt, we have had better results in basic foods, but the income levels of large number of families relatively did not go up resulting in suicides and crop holidays. Reforms partially gave ownership of assets to large number of households but those assets were not sufficient or large enough to make those families have minimum standard of living. The time, therefore has come to revise our basic strategy itself in agricultural sector keeping in mind the realities at the ground level.

New policy mandate (can be called Vision)

The basic objective of new agricultural policy is to raise and stabilise incomes of farmers.

Mission

To raise & stabilise the incomes of farmers through better overall performance of the sector by bridging the gap between potential and existing yield levels through an effective extension mechanism besides scientifically

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putting waste lands for proper use while integrating production, marketing & processing in addition to addressing the problem of risk and credit coverage.

The Road map

This is planned to be achieved through

- A higher growth rate of agricultural sector – in order to achieve this, resource use efficiencies i.e., land, water labour and nutrients will be improved. In addition, more attention will be paid to potential and high growth agricultural sub sectors like horticulture, fisheries, poultry, diary and seeds.
- Integration of three sub-sectors of agricultural production, marketing and processing to attract private investment in agriculture and agro integrated industries is crucial. This is very important for improving employment and income opportunities in the rural areas. It will be pursued.
- A clear farming situation specific strategy shall be evolved for narrowing existing yield gaps in major food and commercial crops. India comprises many agro-ecological situations. Plans or schemes therefore cannot be designed for administrative or political units such as country, states or districts.
- Steps will be put in place to Improve extension reach and increase expenditure efficiency by resynthesising existing schemes. Farm research, extension and education will be tailored towards changing market demand.
- Special efforts will be made to utilise large extent of waste lands by scientific land capability studies. Greening of these waste lands through tree crops shall be a special priority.
- Reduction of risk in crop production through revised crop insurance policies will be attempted.
- Credit coverage through time tested agencies instead of relying only on bank branches shall be revisited. Agents like input suppliers who can bridge the credit gap to tenants etc. somehow has been over looked all along.
- Existing public policies relating to land, water and markets which are not

in tune with current realities of market driven economy and adversely effecting realisation of fair price to agricultural produce and discouraging investments in the sector shall be replaced with liberal and pro farmer policies.

- The policy approach to modernisation, diversification and high agricultural growth, however, shall be environmentally sustainable, economically rewarding, intellectually satisfying, socially recognised with happy farm family and sustainable farming systems central to it as opined by Dr. M.S. Swaminathan.

Basic concerns (Situation analysis)

To realise the above said policy goals and to evolve clear strategies for implementation, the following concerns confronting the sector are to be addressed. SWOT analysis does not make much sense to realise the vision that we set forth. Concerns to be addressed are more relevant at the stage where agriculture presently stands.

- Slow agricultural productivity growth rate.
- Sizable untapped production reservoir gap between the present level of productivity and realisable potential is substantial at the existing level of technology.
- Very low physical, chemical input and human resource use efficiencies low productivity per unit of land, water, labour and nutrients.
- Fast shrinking natural resource base soil and water
- Continued low productivity of rainfed areas
- Substantial unused wasteland and fallow land while green cover in the country is appaling.
- Inadequate extension reach
- Non focussed agro industrial integration
- Poor expenditure efficiency of public funds
- Inefficient markets and negative terms of trade
- Quality problems of inputs and out puts.
- Declining inputs / output ratio.
- Exorbitant wages for labour intensive agricultural operations
- Poor credit coverage and insurance services.

HOW TO ADDRESS THEM? NEW STRATEGIES PROPOSED

Setting Up Agricultural Promotion Councils and District Agricultural Promotion Committees

The primary objective of Government is to raise and stabilise the incomes of farmers. Agriculture is more or less a private enterprise and decisions on what to produce, when to produce, where to produce are taken by farmers and not government. The role of Government is basically to provide a decision support system to the farmer for better decision making. Correct decisions are possible only when information is available wholesome, accurate and in time.

Unfortunately, no Government department today is capable of dealing with any commodity in a whole some manner. There is no mechanism to collect the demand particulars of a particular crop outside the country, and in various states, no institution to advise the kind of standards required for export, to plan and promote production in the most suitable regions and to discourage in unsuitable regions and no institution to coordinate traders, exporters and producers. Hence, an apex body at country, state level and district level bodies need to be created to plan, coordinate and guide agricultural development in an integrated manner. These shall plan and coordinate agencies involved in production, processing and marketing of agricultural commodities through commodity boards. This is essential for better price realisation as well as make our commodities competitive in the world market. These bodies shall also provide information on domestic and export markets, areas/ tracts suitable for cultivation of a particular crop and related technology, data base for suppliers of technology, data base for prospective buyers / institutions, identify location specific problems and agencies to solve, organise promotional campaigns, promote collaboration between Indian entrepreneurs and their counterparts abroad and net work with other institutions like APEDA, NAFED & exploit their strength. Commodities boards for major commodities at the centre as well as state level under the ageis of these need to be established.

Slow Agricultural Productivity Growth and Large Untapped Production Reservoir

The gap in productivity when compared to China, USA and other high productivity countries in case of majority of the crops is too well known and

does not require any elaboration. So also between various regions. Farming situation analysis in many states reveals that gap between potentially feasible at the existing level of technology and what actually achieved (farmers average yield) itself is substantial and one can bridge it by focussing on field level extension. This is possible by situation specific demonstrations and interventions and not possible through national level or state level uniform prescriptions.

Practically all the funding of major state sector schemes is done by the centre. The guidelines for these are based on 'norms' and 'components' that are conducive to the ease of monitoring and accountability rather than to performance. The design is not informed by the concerns of regional variations. Regionally differentiated work plans, formulated in a participatory mode, implemented in a partnership mode with the states is what is needed. The role of centre should be of supplementation and complementation, of course leaving aside research promotion etc. where it has a special role. These differentiated work plans region specific, commodity based should however comprise – interventions defined in a matrix (what, where, how, by whom and by when); promising a destination in terms of quantified, predefined and deliverable outputs; road map destinations only marked by milestones and shall be monitored by centres of excellence.

Very Low Physical, Chemical and Human Resource Efficiencies

This has partly something to do with viability of farm holdings besides poor input management and weak mechanisation.

Simple data analysis by Agricultural University in Andhra Pradesh in some of the districts indicated that a small family of (2 + 2) require a minimum of Rs.4000/- for food, health and educational requirements per month. It means approximately Rs.50,000 per annum is required for a family to have a minimum standard of living which is less than 50% of the salary, an employee in the lowest category in State or Central Government receives. Then, what size of holding is required to get such kind of income? Commonsense or data reveal that atleast 5 acres of wet land or 10 acres of dry land is required for any family dependent exclusively on agriculture. But, against this truth or reality, what State Governments all along have done or presently continuing - they went on giving ½ acre pieces to land less instead of moving them away and settling in other sectors that are always better than agriculture in per capita

income generation. What is required is consolidation of holdings, reducing the numbers engaged in agriculture so that, the reduced numbers in agriculture will have better per capita income rather than distributing unviable bits and pieces to every family. Every family below 5 acres of holding shall be slowly rehabilitated in a phased manner in other sectors so as to reduce the burden of agricultural sector.

Focus on soil health and organic inputs is crucial to improve input efficiencies of inorganic inputs. Organic recycling is the first consideration to reduce cost of cultivation and also to improve water use efficiency. Next is the strategy to improve and stabilise the use efficiency of farm energy resources by putting emphasis on INM, IPM & IWM. In the wake of increasing labour wage structure and labour shortage, mechanisation of intensive cropping system shall receive special attention. Mechanisation not only is cost effective, but also facilitates timely cultural operations which alone is estimated to increase yield by 20% in crops like rice. Similarly pest warning systems and metereological monitoring and alert systems will reduce costs.

Improving Extension Reach

Successful transfer of technology and efficient input management are central to modern agriculture. The present extension strategy was evolved soon after independence based on "individual farmer contact approach" and Development Blocks functioned as a unit of community development and agricultural extension. One or 2 Agricultural Officers at the block level and Village Development Officer/Agricultural Assistants for a group of villages carried out the agricultural extension work.

Thanks to non-availability of other channels of communication, little presence of private input dealer net work and more focus on agriculture by the Government, the services rendered and technological inputs supplied were well received. Resource rich and progressive farmers in the villages with significant influence on villagers functioned as contact farmers during those days and organized group contacts for transfer of technologies. At block level, agriculture was given top priority with close coordination between Panchayat Raj and Agriculture Departments, the Agricultural Officer and his Assistants commanded very good respect among farmers. After introduction of Training and Visit (T&V) system, the agriculture department got dissociated from blocks and a situation of 'neither there nor

here' arose while the strength of field staff had dropped down in many states.

The organizational deficiencies of the department, the technical inadequacies of field staff and failure in timely coverage of villages as per schedule got exposed and the credentials of the department as a technical one was questioned often.

The three things that are important for extension are:

- REACH – Reaching the target farmer by extension worker.
- FOCUS – Attending to location specific adoption gaps.
- IMAGE – Image of extension worker.

At the present level of awareness among farmers on the latest technologies, thanks to the development of Information Technology, communication media and wide dealer network of inputs, the extension workers command respect only when their knowledge base is stronger. Besides, technical information, the farmer is also expecting information on markets, availability of inputs, processing etc., from extension workers for which they are not equipped. Therefore, the revised approach is needed to revitalise extension.

- Extension is required in villages and not in towns. Gram panchayats therefore shall be empowered and resources provided to have their own extension worker by reducing the employees at other levels.
- Krishi Vignan Kendras / University Research Stations have to be made coordination Centres from where the extension workers have to be operate? The setting up of commodity boards as mentioned earlier would help to extend comprehensive extension services including marketing information tie-ups. It is then possible to train extension workers commodity specific and engage them region based? Wherever farmers organize themselves into Associations / Societies like in Europe, Government shall support extension through financial grants. Black Boards in every village shall be provided wherein regular day to day extension messages can be displayed.
- Information Kiosks shall be established in as many villages as possible in a phased manner with private participation. Besides, on Farm Extension Farmers Clubs free of political affiliations shall be promoted for carrying out group extension and for transfer of technology.

- Demonstrations, whole village approach shall be evolved gradually to bridge the yield gap, to ensure recycling of nutrients and reduce cost of cultivation.

Market Reforms and Intervention

The three possible reasons for market failure are:

- Inadequate market information.
- Collusion among the wholesalers / commission agents / traders.
- Inadequate protection for growers against wholesaler insolvency, payment irregularities and fraud.

  Share in consumer's rupee and availability of timely and accurate information are most important from farmer's point of view.

The measures suggested in this regard are:

Building market information service

Information is important for efficient and timely production and for the efficient functioning of markets; especially to ensure that correct market signals reach producers in time to guide their production and marketing decisions. The power to reduce seasonal price variation lies to some extent in the hands of farmers. If they become aware of adjusting uniformities in the price patterns of particular commodity from year to year and combine this knowledge with information available from daily and weekly reports, they could reduce some of the extreme fluctuations by changing the rate of delivery of supplies to the market. Therefore it is essential to use IT to establish and build information network to provide farm producers and farm associations with essential data on crops, inputs, market prices, and weather conditions, technologies and markets in time and accurately. It is necessary to establish an IT sourcing Cell at national level and state level which can go on collecting and purchasing information on crops, inputs market prices, weather conditions, technologies on domestic and export markets, analyse trends and make it available to the farmers through on line computers daily by using the wide area network. This can also be shared with all the Farmers Clubs and extension machinery on line. Setting up of commodity boards will further simplify this approach.

Universal mortgage credit facility to cover farmer storage spaces at village level

All the business houses including people dealing with seed / other inputs can

store their produce in a go down and avail loan facility duly mortgaging the stock. The same was subsequently extended to the farmers produce stored with PACS godowns, AMC godowns and so on. Unfortunately due to their increased cost of transportation and wages, farmers are not in a position to transport to the AMC godowns or PACS godowns and store their produce. It is important that the place where they store should be eligible for coverage through mortgage. In the name of inadequate staff today Banks are not considering the same. However, this shall be made mandatory in order to help farmers to get the loan without significant transportation and storage cost.

- Growers markets shall be promoted, not through the Government control, but through Farmers Committees.
- Free movement of grains and agriculture produce shall be allowed without any restriction.
- Insurance cover for the harvested produce including probably storage and transport shall be provided by the AMCS by evolving a comprehensive policy.
- Modernising market yards to reduce marketing costs is urgent.
- Promote chains of large retail outlets that can be run with fewer margins per unit quantity from private entrepreneurs.
- Lastly, but most importantly, the policies relating to export and import of primary agricultural commodities shall be evolved with consistency and decisions should not be taken in an adhoc manner. Today there is no consultative mechanism-involving stakeholders like farmers in the process of policy decision on export and imports of agricultural commodities. Traders, millers and industrialists who are organized are considered to be influencing export and import policies.

Focus on Agro-Industrial Integration & Related Land Policies

With continuous fragmentation, the small farmers are not able to absorb knowledge intensive technologies for want of security of ownership, production inputs, credit and remunerative marketing opportunities.

Old paradigm

- Equity would be achieved by distributing land to agricultural labour.
- A small farmer cultivating his own land would be more productive.

- Mechanisms like MSP and subsidies on inputs would provide adequate incentive for production.
- Export market is only residual.

Over the decades it has been observed that agro-industry did not develop the way we desired based on the above premises.

The new paradigm

- The ultimate incentive for production lies in value addition and effective marketing system.
- The production system must be geared to the market needs.
- Agriculture, Agricultural marketing and Agro-processing to be viewed as closely linked activities.
- Information net work essential to ensure healthy competition and to assess precisely what the market needs.
- Export oriented agriculture require large-scale investments, which can only come through an organised system of agricultural production rather than existing system of fragmented and marginal production.

To shift to new paradigm, the following initiatives are suggested:

- No more distribution of land to landless. Rather, the landless shall be shifted away from the agricultural sector.
- Encourage voluntary land consolidation wherever farmers come forward through proper incentives like exemption from registration fee and stamp duties etc.,
- Strategies to be evolved for coverage of large-scale commercial forestry / horticulture on wastelands / degraded public lands. Institution of long-term leases shall be explored.
- Efforts to be made to promote contract farming which has been successful in crops like oil palm, tobacco etc.,
- Millet/Cereal based industrial parks and Horticulture industrial parks to be promoted in the potential zones for integrated processing facilities.
- Cold storage chains to be spread to the length and breadth of the country.

Tailoring Farm Research & Education to the Changing Needs

The current investments in research, education and extension are mainly from public funds with its own limitation, specially not being able to meet the sectoral demand. Besides, these are thinly spread.

- What is required is that each district can have an earmarked research station that works as an integrated research centre for major crops of the district and also works as a nucleus for research and extension. Wherever we have more than one research station in a district, the rest can function as sub stations to this nucleus centre.
- Climate management to be given top priority. Early warning systems on pests and diseases, besides, weather, shall be put in place.
- Lateral transfers between extension departments and universities shall be encouraged for mutual benefit.
- Encouragement should be provided for contract research and also industry-research linkages.
- Mechanisation, which was neglected all along, shall be given top most priority by the universities.
- Private sector unlike in the West has not been encouraged in agricultural research. This shall be encouraged by a package of incentives.

Improving Expenditure Efficiency By Redesigning Schemes

As has already been pointed out earlier, it is high time that Governments stop thrusting uniform prescriptions instead of ensuring flexibility at the regional / district level who have their own farming situation based strategies. Deliverables etc. shall be focussed while giving freedom to the field level agencies. Then only expenditure efficiency will improve in the farm sector. Many uniform schemes evolved at the national level were found to fail more or less, except in some pockets. There is no need for the Centre to evolve schemes on its own and leave the choice to the states and regions to plan their own.

Focus on Rainfed Agriculture – Change in Approach

The rainfed lands which are substantial in the country and contribute to nearly 80% of oil seeds and pulses production, 65% of cotton production and 91% of food cereal production are central to Indian agriculture. Farmers in these areas are the worst sufferers as low yields and crop failures are order of the day. Soils are also poor in these regions and farmers are economically weak.

The approach so far has been on watersheds; promote drip and sprinkler systems and supply of seeds. What is required in the present day is tree crops

that require little water but also act as insurer in the long run. There are many species like Simarouba which is an important source of oil, Many dry fruits that were neglected like Almond, walnuts etc., that are being imported on a large scale come up as well in our country.

In addition, a good number of soft and hard wood trees are available. The requirement of soft and hard wood has been growing in the country with improved affordability. Dry lands are ideal for conversion to tree crops and to bridge this demand gap. More than all, tree crops in rainfed area change the micro-environment, precipitation and organic content of the soil. There shall be a time bound programme as in China to convert atleast 1/4th of the rainfed land with tree crops and forests within the next 10 years to have a turnaround of the eco systems while reducing risk to the form families.

Credit Coverage through a network of Bank agents

Credit to the marginal farmers and tenants has always been a problem despite repeated policy assurances. Mortgage or security is an issue that we cannot wish away specially for tenants. One of the solution besides much talked about group security is – use of financial agents that stand between tenant formers and financial institutions. In Andhra Pradesh, more than 50% of the credit in agriculture is practically taken care by 'input suppliers in material form. The net work of large number of input dealers can be used as an excellent financial agency by banks to cover tenant formers. Input providers have the necessary skill, net work to cover the formers in need while also providing adequate collateral or mortgage security to Banks. Somehow, the net work was overlooked. The time has come to revisit this proposal.

Implementation Road Map

- Directions to the States on constitution of Agrl. promotion councils and District level committees as well as putting them in place by 31.3.2012 can be passed on by the year end.
- Comprehensive guidelines on the lines of RKVY regarding preparation of work plans shall be passed on by Dec2011. States will be asked to come up with specific farming situation based strategies to bridge the yield gaps in crops of their choice with specific interventions before year end. This exercise is most important of all. Deliverables, timelines etc become part of these proposals. Depending on their request, a Joint Secretary level

officer will visit the state and finalise these workplans. Existing budget out lay will suffice to start with.

- Proposals on extension, dry land strategy, fresh research with new out look, incentives to agro- industrial integration, creation of agro-market information service units at state/ dist. Level, state specific commodity boards/ agencies becomes part of unified work plan for the state. Wherever, states do not agree to decentralise extension etc on the lines suggested, support will not be provided for that component by the centre.
- Work plans can be approved by 31.3.2012 and can be put in operation in the next financial year.
- Actions like agrl/ market information units, setting up of commodity boards/ agencies at the national level can be worked out by reducing the size of the Ministry and partly using the same along with specialists. This can be completed by around April 2012.
- Negotiations with Banks to work out modalities on using input suppliers as "Bank agents" with adequate safeguards and right incentives can be carried out under the ageis of Finance ministry. This can be implemented in a phased manner state by state duly involving them.
- As proposed, implementation is not going to be difficult once, in-principle, we decide to go ahead with.

Enhancing Effectiveness of PPP in Infrastructure Projects, in particular in the Road Sector

Raghav Chandra*

Objective

The PPP model/ approach is being deployed increasingly as a favored approach for implementation of infrastructure projects. PPP projects have come up in the highways/ roads/ energy/ urban/ housing/ real estate/ transport sectors amongst others. PPP projects have benefits compared to purely public-funded projects because they help to bring in private sector efficiencies in design, innovation, construction and implementation of projects and because they have a life-time approach, and they help in risk-sharing during the design, construction, financing and maintenance stages. However, there are several difficulties and weaknesses in the implementation of projects on a PPP basis. The general perception is that once a project is being undertaken with private participation the responsibility of the government/ authority ceases and the private party should be left to themselves to take care of the development. Problems have arisen viz., timely implementation, good quality of service-delivery, financial prudence, and long-term sustainability of the PPP approach. It is therefore imperative to examine how PPP projects and their implementation can be made more effective and responsive to the needs of (A) government/ authority (B) the common consumer of the services for whom the project is intended. Although the highway sector is taken as a model for the framework, however, these issues are intrinsically common to all infrastructure projects, and so there is need to address them in an equal manner.

Current Scenario

The level of private participation in all infrastructure projects during the 11th Plan is estimated by the Planning Commission to be about 25 %. This is

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expected to rise to about 50% in the 12th Plan. The key mode of private-participation is through the BOT (Build-Operate-Transfer route). Of these, the majority are through the BOT-Toll route and the rest are largely through the BOT-Annuity route. In the highway sector about 67 % work is currently being undertaken on PPP basis. This is expected to rise in the 12th Plan period to about 90% for the National Highway Development Project and about 75% overall for the highway sector. MoRTH is also offloading Operation, Maintenance and Transfer (OMT) projects on PPP basis.

As on July 31, 2011, a total of 187 highway projects covering a length of 15,109 km with an estimated cost of about Rs. 1, 30,000 crores had been awarded by NHAI on PPP basis. Out of these, 59 projects covering a length of about 3,304 km have been constructed and 128 projects covering a length of approximately 11,805 km are under implementation. More than two-thirds of the constructed PPP highway projects are part of NHDP Phase-I and NHDP Phase-II. While the Government of India has a scheme by which Viability Gap Funding can be sanctioned for upto 40% of the Total Project Cost (TPC) as a grant from the government/ authority to a private bidder, certain projects have gone on a negative bid, ie., the bidders have, in effect, brought in a premium to bag those projects. In certain cases, the Net Present Value of the premium is more than the estimated TPC of the project. Between 2010 and 2012, out of 69 projects, 41 have been those in which grant/ subsidy has been sanctioned and 28 those in which premium/ negative subsidy has been received.

Many PPP projects have failed to be implemented in time or have run into difficulties. These include water and energy projects, social sector projects, real-estate projects, etc.

PPP Road sector projects in India have been an essential part of highway development policy. However, many of these projects have either not been completed due to difficulties in the various stages of their development-project financing, project construction or have run into problems of effectiveness because of poor handling of post-implementation/ operational issues—capacity augmentation, safety standards, revenue-sharing, maintenance-in short, in providing user-satisfaction and in serving the key clientele for which they were intended.

International Experience

Annual PPP in developing countries is of the value of about 150-200 billion dollars. The leading Sectors are –Energy, Telecom, Transport and Water. Various implementation models under PPP are:

Annuity:

Construction and interest rate risk are transferred to the Concessionaire. This has been found suitable for projects where the Public authority

- does not have full funds available
- Cannot immediately assess the project risks
- Does not want to waste time in marketing the Project
- Wants to capture the likely upside of the Project
- Does not have direct construction capacity

BOT toll:

All risks are passed on to Concessionaire. The bidding parameter is positive subsidy or Viability gap funding. There could be a case of negative grant paid by the concessionaire upfront.

BOT with Revenue sharing:

Quantum of sharing of revenue between Public and Private Partner is the bidding parameter.

BOO (T) with tariff of the services being the bidding parameter:

Formation of Special Purpose Vehicles between the Authority and the Private Partner:

Although PPP is the preferred mode in the infrastructure sector in many countries especially for large-ticket projects involving heavy capital expenditure, with the exception of a few European countries and Malaysia, very few countries have taken to the PPP mode in the highway sector. France has given its toll routes with the private sector. Initially, the level of private interest was relatively less. Subsequently, they have carved out regions and given away road concessions to private developers in regional clusters for management and tolling. In the case of France, the concession agreements are such that they allow Concessionaires the latitude to raise and choose their toll/tariff. However, the performance benchmarks on qualitative aspects, especially from the safety and hazard prevention angle are very strong. Also, the period of concession is substantially longer.

Key Issues in PPP Effectiveness

PPP Projects have been observed to face concerns in the following areas:

- Need for better project preparation and project structuring
- Need for better stipulation of performance benchmarks and outcomes
- Need for quicker land acquisition
- Need for better liaison with State Government agencies
- Need for better financial support to help quicker Financial Closure
- Need to generate better revenues and capture upside from traffic-intensive projects
- Need for Regulator for neutral monitoring of stipulated benchmarks
- Need to have interest of the public to be better-safeguarded

Based on analysis of performance of PPP projects and review of select experiences, the following critical areas of concern with regard to effective implementation of PPP projects arise:

- **Policy, Institutional and Regulatory Matters**
- **Post-award Issues, and financing of PPP projects**
- **Toll Matters**

As these issues are inter-dependent they are being dealt with concurrently.

PPP Policy

As of now there is no formally defined over-arching policy that circumscribes PPP in the infrastructure sector and lays down the guidelines, parameters or concepts of PPP (although recently a draft of a National Public Private Partnership Policy has been issued by Department of Economic Affairs, Ministry of Finance for consultation). Currently, the only substantial policy documents are the legal ones that are followed on a project-by-project basis which lay down the respective rights and obligations of the authority bidding out the project and the concessionaire. These are the Model Concession Agreements (MCA), formulated with the blessing of the Government, but are essentially contractual, and are not modulated by a stronger policy-guideline.

Land Acquisition and R&R Policy

With the increasing development of highways in the country in the last 5-7 years, land acquisition for the purpose has become more and more complex owing to the rigidity of the Act, continuously increasing land prices and

delays in acquisition. There are issues relating to role of state Governments. The proposed Land Acquisition Bill 2011 has significant impact on PPP projects in road sector. While on certain aspects the Act excludes National Highway projects, the inclusion of R and R as part of law, is going to increase cost of land acquisition for road PPP projects, increase time required for land acquisition, and also put significantly enhanced R&R obligations on the government and thereby expose it to litigation with the private party for non-fulfillment of conditions precedent.

State Support Agreements

In December 2010 an umbrella SSA was signed between twenty-four States and Union Territories and NHAI to expedite the highway projects. Negotiations are being carried out with other states to become a part of the same agreement. However, signing of SSA does not automatically entail complete cooperation from the relevant state machinery. There is need for the GOI to have constant interaction with the States to ensure that they feel incentivized to fulfill their commitments in a time bound manner.

Alternate Revenue Mechanisms

In addition to toll/annuity, other sources of revenues need to be also explored to improve project viability and thereby allowing higher private participation:

- Advertisement Rights
- Real estate development along the highway corridor
- Development of way side amenities
- Others - use of the highway corridor / right of way for installing fibre-optic cables, mobile towers etc. Such infrastructure can be shared by multiple operators once it is installed.

Environmental, Forest & Wildlife Clearances

Delays in getting timely permissions and clearances impact the implementation of the highway projects in an adverse manner.

At the time of bid process itself mechanism for handling non-receipt of clearances is specified, which is generally in form of pro-rata reduction in bid quote as a Change in Scope provision in the MCA. However, such uncertainty increases risk perception of bidders as receipt of required clearances later during the Concession Period itself leads to certain other issues relating to

funding & cost escalation. Hence, the process for taking such clearances from the concerned department at Centre or State level should be initiated at an early stage of the project cycle and the Ministry of Environment must give fast track forest/environment and wildlife clearance the moment a project is given the green signal by the Union Cabinet.

Need for a Regulator

In the present system, NHAI, MoRTH and various state level agencies are tasked with the roles of project preparation, project development, policy formulation, policy-regulation and provision of facilitation services under a strong rights-and-obligations model under the MCA.

This results in a potential conflict as the rule-making body is also the implementing body and there is no independent assessment of project-performance across various parameters

In general, the key responsibilities of a regulatory body should include:

- Tariff Setting- role of the regulator may involve stakeholder consultations on the existing policy and deciding on suitable amendments, if any. Moreover, the regulator could have the responsibility of setting tariffs for the forthcoming green-field alignment expressway projects in the country
- Regulation of Service Quality- The regulator would monitor service standards such as lane availability, Operations & Maintenance provisions in the governing documents including provisions of emergency services, safety etc. provided by the concessionaire / NHAI.
- Assessment of Concessionaire Claims- The regulator can assess the claims raised by concessionaires such as disputes, change of scope etc.
- Collection and Dissemination of Sector Information- The regulator can collect and record information concerning the Roads & Highways sector and would also require other entities such as NHAI, State PWDs, Indian Road Congress (IRC) etc., to collect and publish such data.
- Service-Level Benchmarks- The regulator may also benchmark performance of concessionaires / implementing agencies against others in the country to judge the performance of service provided and reasonableness of cost estimates.
- Monitoring Compliance of Concession Agreements- Monitoring the compliance of Concession Agreements can be a key function of the

regulator. Moreover, it is to be analyzed and debated whether the regulator has to restrict itself to the Model Concession Framework or go beyond the same. The regulator would also have to look into abstract / qualitative aspects that are not defined in agreements such as measures to avoid congestion on stretches and providing seamless comfort to commuters.

Regulation & "Suicide Bids"

One of the key issues being discussed these days is that of "Suicide Bids" i.e. the issue of seemingly unviable aggressive quotes from developers.

Such bids not only raise question on the viability of the project & thus the ability of the developer to implement the project, but also raise some other key questions such as:

- Is the implementation agency under-estimating viability of projects?
- What would happen when the project goes into distress because of seemingly unviable bid?
- Can such cases turn out to be feasible in future, thus becoming "visionary bids" instead of "suicide bids"?
- What would happen if the developer compromises on quality & service levels to sustain the seemingly aggressive bid? Is Model Concession Agreement capable of handling such situations?
- Will such bids drive out more cautious and skilled international parties from bidding for Indian projects?

A Regulator can have an important role to play in such situations. A regulatory approach towards such situations can bring stability in the system and increase confidence of the stakeholders involved. It is felt that the proposed regulatory body should meet the key criteria of Autonomy, Transparency, Predictability, Flexibility, Independence and Accountability. However, it is pertinent to note here that a situation of over-regulation can hamper effective functioning of implementation agencies and thus, might have unfavorable impact on the sector.

Capacity Development and Internal Restructuring

At one end, we have to develop capacity within institutions, and on the other end, we have to increase availability of skilled manpower for the sector. Some of the key considerations for the same are:

- Enhancing cross-functional understanding of personnel in PPP implementation agencies through training & development programs
- Restructuring of NHAI in order to best use & develop capacity to raise resources, vendor management, concessionaire management and implementation of projects
- Segregating project implementation from project formulation and therefore, the need for a separate procurement division in NHAI
- Decentralization of power and enhanced availability of skilled manpower at regional levels
- Adoption of professional management principles and manpower
- Creation of databases as policy & decision support system
- Development of streamlined processes & systems leveraging information technology
- Better synchronization between central and state level agencies for sharing resources & knowledge
- Establishing Strong MIS for monitoring of projects
- Training policy focusing on needs of training at entry, on job site and periodic refresher courses
- Encouraging Engineering and Technical Institutions to attract students in Highway Engineering
- Institutions to carry out Training Needs Analysis to identify the skill gaps
- Involvement of contractors / developers in developing skilled resource pool on a sustainable basis
- Apprenticeship development by contractors / developers with provisions for subsequently deploying trained manpower to implementing agencies.

Tolling Issues relating to Government

There have been cases of reports of leakages in toll collections where toll is collected by the Concessionaire and there is a provision for revenue-sharing of significant and unexpected increase in traffic. A suitable methodology is required to be devised so that such upside can be effectively and honestly shared with the Authority without unfavorably affecting the rights of the Concessionaire.

Tolling Issues relating to Private Parties

There are cases of structural leakages in toll collections because of presence of alternate/competing routes to various stretches. Changes in traffic profile based on decisions of various Government agencies relating to development of region, development of alternate roads, level of support to economic activities etc. have to be borne in mind to ensure that the PPP project is viable and the interest of the private party is sustained.

Traffic study has significant impact on evaluation of financial viability of a DBFOT (toll) project. A reasonably accurate estimate of financial viability of the project defines the expectations and also helps the implementation agency in structuring the project. Thus traffic studies need to be up to date and should also focus on projection of induced traffic and reasonable growth rates. It is also to be noted that for using such traffic studies we might need to make modifications in the current viability assessment and project structuring approach.

Tolling Issues relating to Users

Users' willingness-to-pay is affected by various factors including socio-economic, cultural & capacity considerations. MCAs provide for linkage of toll rates with Wholesale Price Index (WPI) over and above a fixed increment every year. Such continuous increase in toll rates might not be always acceptable to users especially when it is not linked to gains in service levels. As per the existing Toll Policy, in 6-laning projects users are required to pay the toll rates applicable for 4/6 lane roads even during the construction stage, even when the road is under construction, causing discontentment. Since, during such period service levels on the roads decline, the payment of full toll rates during such period adds to the inconvenience faced by the users.

Openness to Revised Methodology for sharing of Profit/ Revenues

For the purpose of sharing upside of project revenues due to windfall escalation of traffic volumes, it is worth considering the features of the New Exploration Licensing Policy (NELP) that governs the auction of oil & gas blocks in India. As per its current terms, the sharing of profit is based on a sliding scale tied to return or multiples of investment recovered, pre-specified in the contract. This structure allows the private operator to substantially recover his costs before sharing of revenue. However, once the

costs are recovered, the share of government increases substantially. Initially, the Government's share could be as low as 5 to 10 per cent of the revenues-above-benchmark, and subsequently, along a sliding scale, it could increase to as high as, say, 80-90 per cent.

As per the current provisions, in case actual traffic exceeds 120% of the Designed Capacity of the Highway, all revenue earned from the traffic exceeding the Designed Capacity is shared between the Authority and the Concessionaire.

Congestion Pricing

Congestion pricing is the application of fees to facilities during periods of peak demand. It creates a market for road use based on the willingness of drivers to travel during these times. Such a system has been tried and successfully implemented in countries like US, Singapore, Sweden, UK, Canada to name a few. The success of such a system depends on number of factors such as availability of alternative or competing corridors, enforcement, political & market willingness apart from the necessary equipment and technology. In the Indian context, competing roads or corridors are available in the urban areas. Keeping in view the proposed expressways which are expected to have better service quality in terms of traffic levels and State / National highways available as competing roads, congestion pricing as a conceptual framework is worth considering.

Shadow Tolls

Shadow tolls are payments made by the authority to concessionaires of PPP projects based on the total vehicle-km usage of the toll highway. This mechanism has also been used in situations where demand uncertainty about road use makes a financing package difficult. With more and more projects being awarded on the DBFOT-Toll mode and also the pressures for toll-exemption and of inflation prevalent in the Indian context, and the rising cost of projects severely affecting their viability, the concept of shadow tolls needs to be concretized.

Expressways & Scrutiny of Toll Policy

MoRTH is in the process of planning for a National Expressway Grid. Such expressways might require separate toll policy because of reasons relating to competing facilities, level of services and congestion management.

Financing of Projects

There is need and scope to address financing issues from the following perspectives:

- Bringing cheaper sources of finance to enhance project financial viability & enhancing breadth of financing instruments
- Bringing additional sources of finance in market to cater to increasing size & number of PPP projects
- Making available instruments which suit the tenure, size & nature of PPP projects

Some of the key issues that need to be resolved are:

- An underdeveloped bond market has constrained PPP road projects to mainly depend on debt from commercial banks
- Lack of presence of long-term savings institutions, such as insurance companies and pension funds having long-term liabilities, with appetite for long-term debt instruments in PPP project funding
- Commercial banks are increasing facing limits on their exposure to infrastructure sector, which would also affect funding of road PPP projects
- Commercial banks also face issue of asset-liability mismatch as PPP projects require long term funding
- Re-financing scheme from IIFCL has not helped the market as initially envisaged because of certain attached conditions relating to tenure & interest rates
- External Commercial Borrowing (ECB) is limited in road PPPs because of certain constraints in the policy framework
- Debt to road PPP projects is classified as unsecured by commercial banks since no tangible physical security is available to lenders. Due to this such debts carry higher interest rates and quantum limitations
- Issues relating to Model Concession Agreement and its provisions, such as, issues of creation of charge on receivables etc.

Contract Management & Monitoring

- Effective contract management & monitoring is required for protection of user interests, protection of Government's rights & interests, timely fulfillment of Government's responsibilities, oversight on project execution

with respect to Concession Agreement, Generally Accepted Good Practices and Applicable Laws.

- Furthermore, the fact remains that it is Government's primary responsibility to execute road projects and due to benefits of PPP structures, Government grants various rights to the private parties. Also, in general, such projects are monopolistic in nature, requiring Government oversight. Thus, contract management attains further importance in this context.
- A proactive approach is required to ensure that various issues can be avoided before they materialize.
- Apart from the awarding authority, Concessionaires / private parties also have the responsibility to develop capacity for effective & efficient contract management & monitoring. This can be in nature of:
- Timely collection of data & reporting
- Timely real-time interacting with awarding authority to prevent lapses
- Cooperating with monitoring teams & tools

Capacity required for Contract Management & Monitoring

- Established & error free data channels in form of regular reports or IT enabled systems
- Capacity to analyze information & to understand variety of issues including technical, financial, legal etc. leading to triggers / actions
- Repository of checklists & formats for efficient monitoring
- Capacity to identify data gaps & information inconsistencies
- Capacity to handle regular management & monitoring tasks as well as contingencies such as force majeure, re-financing, termination, substitution etc.
- Standardized set of action items against various triggers

Means of Enhancing Institutional Capacity for Contract Management & Monitoring

- Designing & implementing training courses at reputed institutes
- Developing "Best Practices School" within institutions for collation, development & sharing of best practices
- Making contract management as one of the key evaluation parameter of success of an institution / division or a PPP programme

- Having dedicated people for contract management from various functional backgrounds
- Documentation and continuous evolution of contract management guidelines through stakeholder consultations & experiences
- Having regular reporting on contract management & monitoring followed by review meetings

Monitoring Performance of Private Developers

Various qualitative & quantitative indicators can be measured & monitored for evaluating performance of the private developer:

- Timeliness: Timeliness of tasks & reporting
- Value for money: Cost justifies the quality & work output as per market standards & best practices
- Quality: Work meets standards & requirements
- Responsiveness: Coordination with awarding authority and ability to find win-win solutions
- Reputation: Market reputation & perception
- Experience & Skills: Level of experience and skills suitable for work
- Capacity: Resources and organizational capacity varying with variety & size of work
- Dispute History: Track record in disputes & litigious nature

Possible use of Performance Monitoring

Performance monitoring of private developers can have multiple benefits for the Government. Some of such key benefits are:

- Timely feedback to private developers for improvement & mid-course corrections
- Effective use of performance based payment system
- Performance indicators can be used during selection process
- Performance indicator database can lead to analyses of trends & future strategies
- Performance monitoring may also serve as base for regular interactions with private developers for consultations
- Performance monitoring may also have impact on approach towards overall contract management & monitoring

- Devising ways & means to enhance performance
- Measurement of impact of contract management & capacity building as well as policy initiatives in terms of impact on performance of private developers
- There is also a need for an elaborate performance monitoring system for monitoring performance of all vendors / service providers apart from private developers.

Key Recommendations

Policy & Planning

PPP as an accepted approach is going to be strengthened in the future in view of its capacity for leveraging scarce government resources, risk sharing, and bringing in private sector efficiencies for the lifetime of the project. However, based on an understanding of various projects that have been albeit bid out successfully at the initial stage, the following actions need to be taken to enhance the future productivity and effectiveness of PPP projects in the infrastructure sector:

- Developing a comprehensive PPP Policy, for road sector, encompassing all the stages of developments including matters pertaining to MCAs, land acquisition, environmental clearances, project planning etc.
- We should have a Committee of Experts on Land Acquisition matters, to devise a Land Acquisition Manual / Guidelines for highway sector which is to be revisited annually. The manual can clearly define the process for formulation of compensation awards (and R&R measures) for highway projects. Such manual / guidelines would naturally take into account the relevant provisions of the Land Acquisition Act.
- Providing clarity on and streamlining of environmental clearances for road projects under a single framework so that Cabinet clearance of a project should only mean fine-tuning of clearances and not leave fundamental basis for doubt.
- It is to be ensured that road development initiatives do not lead to unfavourable impact on social, environmental or corporate governance aspects and if there is any such impact, it should be counter balanced with other social, green & corporate governance initiatives. Such initiatives can also be made part of the model concession framework for wider implementation.

- Physical & financial progress targets need to be brought in sync with the availability of resources, preparedness and institutional capacity.
- Evolution of model PPP framework should continue with continuous involvement of stakeholders and taking into account experiences of agencies in PPP projects. However, the pace of the evolution should be such that it does not cause any confusion in the market.
- Implementation of unified technology for Electronic Toll Collection in the country would bring clarity on most operational issues.

Institutional

- Segregation of role of regulator from implementation agency and setting-up of a separate effective regulatory body for Infrastructure sector/Road sector.
- Regulator to screen and evaluate the economic environment to forestall scenarios of "Suicide Bids" from emerging.
- Development of unified guidelines & framework for contract management & monitoring for PPP road projects. In addition, a robust framework needs to be developed for performance monitoring of developers as well as other service providers for PPP road sector projects.
- Faster and effective steps to redress of disputes by using a sound Independent Expert Group Mechanism to advise on resolution of disputes between Concessionaire and Authority.
- Capacity development of central and state level agencies on aspects relating to evaluation of projects, project structuring, bid process management & contract management covering multi-functional skills from legal, technical & financial domain.
- Development of skilled and trained resource pool for PPP road development in India with focus on highway engineering.

Financing & Viability

- Different sources of revenues can be explored for PPP projects. Such sources may include advertising, real estate development, way side amenities, additional stamp duty on road side properties etc. This along with innovative project & financial structuring examples from various countries can be evaluated in Indian context.

- Implementing recommendations of committees on financing of PPP infrastructure projects in India and other related initiatives which are being debated with the stakeholders.
- Improving coverage, quality and use of traffic studies for assessing project viability and project structuring
- Need for a suitable mechanism for equitable sharing of traffic related up-side between Government & Private Party without harming interest of any party.
- User perspective to be kept in mind while developing and implementing toll policy especially in specific cases of 4 to 6 laning projects.

A Specific Case Analyses: The Delhi-Gurgaon Expressway Project

This project was conceptualized in 1999 as a part of Golden Quadrilateral project with considerable concern being expressed on the time taken to commute to the satellite city of Gurgaon from Delhi and the high-traffic on the road to the international airport.

It was awarded to the consortium of Jaypee Industries and DS Constructions Ltd. in 2002. It was also the first project to be awarded on negative grant basis. However, the project could be opened to traffic only in 2007, after a gap of 5 years.

In examining this project, the following noteworthy issues have been observed:

- NHAI relied on old traffic data which resulted in a situation with unprecendented traffic levels causing heavy queuing at the toll plaza.
- The project was heavily delayed, partly because it required approvals from 15 Government / Civic Bodies, a complex and time consuming process. Such delays could have been avoided through a single-window clearance mechanism.
- The original project cost envisaged was Rs. 547.50 crores. However, Actual Cost turned out to be Rs. 1,175 crores. There were substantial changes in the original design and scope of work, keeping in mind future requirements and the convenience of commuters. Out of total of 11 structures, 9 had significant design modifications. The drastic change in scope caused increase in project cost and consequent delay.

- The project also faced issues in land acquisition. There were certain small parcels of land which were difficult to acquire.
- Experiences in this project highlight the importance of reliable and up to date traffic data, single window clearance for large projects, deeper stakeholder consultations for design finalization during project preparation especially in urban areas, and need to closely monitor project performance as well as to ensure that audited results reflect true performance of the project.

Key post-implementation issues that are of particular concern to the authority/government in this case are:

- Issue of exit of a partner (Jai Prakash and Associates, who was the lead partner in the bid-winning consortium at the RFQ and RFP stage) who could have been morally more responsible in resolving various issues
- Issues of inadequate capacity augmentation, maintenance and arrangements to alleviate commuter duress
- Issues in correct estimation of traffic achieved and proper sharing of revenues
- Issues of Escrow Account tampering undertaken unilaterally by Concessionaire, exposing NHAI to financial risk

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Land Acquisition in India by Private Sector Industry

Basudeb Banerjee*

Introduction

Traditional Developmental Economics has never considered land as a constraining factor in the progression from agriculture to industry, since the requirement for land is negligible at a macro-level. The most industrialized nations still have adequate land available for agriculture, even if due to mechanization, the labour employment is agriculture is indeed small. Thus the physical requirement of land for industries and supporting infrastructure and urbanization may not be very large compared to the total agricultural land in an economy like India. Some quarters are extremely worried that the large-scale use of agricultural land for industrial purposes might impose a serious threat to food security. This is clearly a fallacious argument, given the relatively small quantities of land that is being spoken of, even in the unlikely event of a rapid and all permeating industrialization. Dr. Abhirup Sarkar, writing in the Economic and Political Weekly, argues that if we suppose West Bengal requires 1,00,000 acres of additional land for building up infrastructure, industries and a modern services sector, it would still be less than 0.7 per cent of the total agricultural land in the State. It is highly unlikely that if this minuscule amount of land goes away from the agricultural sector, the total foodgrains production of the State would be substantially reduced.

However, when land is acquired for industry, howsoever small in relative quantity, it implies eviction of people from their traditional livelihood. This has a major impact on local income and distribution of assets and a social and political implication. As per the 2011 Census figures, West Bengal is the second most densely- populated State in the country after Bihar. Moreover, holdings are fragmented due to demographic reasons and due to a more

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effective implementation of land ceiling laws. Share-croppers (bargadars) and allottees of ceiling-surplus land (pattadars), together hold or operationally cultivate 41% of the cultivable land, are also important stake-holders in the entire land acquisition debate. However, the State Government had partially addressed the legitimacy of the loss of livelihood of the bargadar by undertaking State amendments to the Central Land Acquisition Act, 1894, Section 23(4). 3. Major agitations over acquisitions of land have taken place in the past four decades in India, especially from the 1970s, in connection with the construction of large-scale dams, with the emphasis on environmental conservation and the rehabilitation of (mainly) tribal populations which were displaced. Land for extraction industries have also led to such agitations and consequent political debates but not of a significant magnitude. No major political party had participated in such agitations at the State or national level. However, arguably the earliest post-independence "civil society" movements have their origins in these agitations.

In the meantime, State Governments went ahead in the post-independence years with land acquisition for building roads, railway projects, for minor irrigation and power projects without any serious political agitations beyond local level protests. Most mainstream political parties probably acquiesced with the State endeavours to acquire land for what were mainly "public purposes". 5. In West Bengal, apart from smaller requirements at the district-level, larger tracts of land were acquired mainly for irrigation and power projects and for special projects. Acquisition of some land for industrial growth centres under State agencies had taken place, even in the 1950s (for example, for the Durgapur Steel Plant in Bardhaman district or later for the Haldia industrial area), acquisition of land directly for private industry in West Bengal in a large scale, however, happened from the 1990s. Political movements against such acquisitions continued to be localized and muted.

While land is a State subject, land acquisition is a concurrent subject under the Constitution. The major Act that has been used has been the Central legislation, Land Acquisition Act, 1894. However, several State Governments have undertaken State Amendments to this Act and have also, over the years, made special legislations at the State level for acquisition of land, mainly to speed up the process of possession. The Government of West Bengal, for

example, had passed the West Bengal Land (Requisition and Acquisition) Act, 1948 (Act-II of 1948) to provide for the requisition and speedy acquisition of land wherein possession of land could be taken prior to finalization of award. Rehabilitation and Resettlement was, however, still a far cry. This Act was indiscriminately used up to the 1990s, parallel to the 1894 Act until it was repealed.

There are also an additional 18 special Central Government legislations for acquiring land for the Railways, Defence, Highways and for setting up Special Economic Zones, most of which emphasize on speedier disposals with some enabling provisions for bargaining with respect to the price-discovery mechanism.

Only some States such as Orissa had, even in the past, formulated Rehabilitation and Resettlement Acts. A National Policy for Resettlement & Rehabilitation of Project Affected Families was attempted in 2003 and a National Rehabilitation and Resettlement Policy in 2007.

It could be argued that the large –scale acquisition of land, utilizing the coercive Land Acquisition Act, 1894, for private industry under the "public purpose" label started in right earnest, so to speak, from the 1990s. An approach of clustering and aggregation has first led to formation of Special Economic Zones (SEZs) and even now, the new National Manufacturing Policy speaks of National Investment and Manufacturing Zones (NIMZs). That apart, the Delhi-Mumbai freight corridor and other corridors in the east and the south would also require further aggregation of land.

Large-scale political agitation regarding land acquisition started from the late 1990s.The Singur and Nandigram agitations in West Bengal led to a major political change in the State. In several States, including diverse States such as Uttar Pradesh and Odisha, agitations against forceable acquisitions for mega-projects and SEZs led to the demand for a major change in the existing laws.

It is in this background that the Land Acquisition, Rehabilitation and Resettlement Bill, 2011 (LARR Bill, 2011) has been introduced in the Lok Sabha and promises to comprehensively change the way land is to be acquired for private industry. The Bill is in line with the earlier rec¬ommendations of the working group set up by the National Advisory Council, while it differs on some key issues. Several State Governments and certainly West Bengal are

also planning to have their own policy which would possibly go beyond the final shape that Parliament would provide to the LARR Bill, 2011.

Given that land markets in India lack depth and are imperfect, with an asymmetry of power and/or information, this paper attempts to examine some aspects of direct land purchase by private industry. Political support to either of the bargaining parties determines outcomes and the use of coercive force, where land transactions are concerned, is extremely widespread. The context is of the mechanism by which the proposed buyers, could ensure peaceful eviction of people from their traditional livelihood, convince them (and by implication the major political forces) and those who enjoy usufructs into the benefits of an industrial or infrastructure project, setting up a framework of a fair price-discovery process that eliminates both (a) the possibility of exploitation of land owners and others, and (b) the problem of "holding out" by some sellers. We will argue that a role of the Government exists even in such transactions as a regulator and examines some ideas in this context.

Aspects of proposed LARR, Act 2011

The new proposed Act is that there it recognizes the increasing need for land acquisition since infrastructure across the country must expand rapidly and industrialization, especially based on manufacturing, has to accelerate and urbanization is inevitable. Land is an essential requirement for all these processes. Government also needs to acquire land for a variety of public purposes.

The Act seeks to balance the need for facilitating land acquisition for various public purposes including infrastructure development, industrialization and urbanization, while at the same time meaningfully addressing the concerns of farmers and those whose livelihoods are dependent on the land being acquired.

The Act is a combined law, covering both Land Acquisition and Resettlement & Rehabilitation since it was felt that not combining the two risks neglect of the latter.

The Act clearly takes on board many of the issues that have come up in the past few years, post-Singur and SEZ and other related agitations from different parts of the country. One of the most important aspects is the recognition of "consent" which was a major issue in the Singur agitation by the All India Trinamool Congress in West Bengal.

The Act looks at 3 broad situations:

- Government acquires land for its own use, hold and control
- Government acquires land with the ultimate purpose to transfer it for the use of private companies for stated public purpose
- Government acquires land for immediate and declared use by private companies for public purpose, wherein the stated "public purpose" in (b) and (c) cannot be changed subsequently and 80% of the affected persons have given "consent".

The Act does not envisage the Government acquiring land for private companies for private purposes or any multi-crop irrigated land for public purposes.

Only the R&R provisions of the Act will apply when private companies buy land through private negotiations under Section 42, equal to or more than 100 acres(50 acres in urban areas), on their own. R & R will also apply when a private company requests the appropriate Government for acquisition of a part of an area so identified for a public purpose.

"Public purpose" has been redefined in the Act. A part of the definition relates unambiguously to Government's own use. There is, however, an exception clause where it is for a purpose where "the benefits largely accrue to the general public" and more specifically, for "PPP projects for the production of public goods or public services" and "for the provision of land in the public interest for private companies for the production of goods for public or provision of public services". Importantly, consent of at least eighty per cent of the project affected people shall be obtained through a prior informed process to be prescribed by the appropriate Government. Provided further that where a private company after having purchased part of the land needed for a project, for public purpose, seeks the intervention of the appropriate Government to acquire the balance of the land it shall be bound by rehabilitation and resettlement provisions of this Act for the land already acquired through private negotiations and it shall comply with all provisions of this Act for the remaining area sought to be acquired.

Section 42 of the Act deals with purchase of land through private negotiation. Where any person (other than Government, PSUs or Societies under Government control) purchases land equal to or more than one hundred

acres, in rural areas and fifty acres in urban areas, through private negotiations, he shall file an application with the District Collector notifying him of intent to purchase; purpose for which such purchase is being made; particulars of lands to be purchased. It shall be the duty of the Collector to refer the matter to the specially-appointed Commissioner for Rehabilitation and Resettlement for the satisfaction of all relevant provisions under this Act related to rehabilitation and resettlement. Based upon the Rehabilitation and Resettlement Scheme approved by the Commissioner as per the provisions of this Act, the Collector shall pass individual awards covering Rehabilitation and Resettlement entitlements as per the provisions of this Act. No land use change shall be permitted if rehabilitation and resettlement is not complied with in full. Any purchase of land by a person without complying with the provisions of Rehabilitation and Resettlement Scheme shall be void ab initio.

The Act determines the Award or compensation by " Market value" of the land by looking at a) the minimum land value, if any, specified in the Indian Stamp Act, 1899 for the registration of sale deeds in the area, where the land is situated; or b) the average of the sale price for similar type of land situated in the village or vicinity, ascertained from fifty per cent of the sale deeds registered during the preceding three years, where higher price has been paid; or whichever is higher, provided that the market value so calculated shall be multiplied by three in rural areas. The value of the assets attached to land such as buildings/ trees/ wells/ crops etc would be determined by the Government.

In addition, "Solatium" at the rate of 100% of total compensation will also be offered. This implies that in case of urban areas, the award amount would be not less than twice that of the market value determined, whereas in rural areas it would be not less than six times the original market value.

The major elements of the R&R package for land losers proposed are the following:

- Subsistence allowance at Rs. 3000 per month per family for 12 months;
- Rs 2000 per month per family as annuity for 20 years, with appropriate index for inflation;
- If house is lost, a constructed house of plinth area of 150 sq mts of house site in rural areas or 50 sq mts plinth area in urban area;

- One acre of land to each family in the command area, if land is acquired for an irrigation project;
- Rs 50,000 for transportation;
- Where land is acquired for urbanization, 20% of the developed land will be reserved and offered to land owners, in proportion to their land acquired;
- Upon every transfer of land within 10 years of the date of acquisition, 20% of the appreciated value shall be shared with the original owner whose land has been acquired;
- Mandatory employment for one member per affected family or 2 lakh rupees if employment is not offered;
- Offer of shares up to 25% of the Compensation amount

The major elements of the R&R package for livelihood losers proposed are the following:

- Subsistence allowance at Rs. 3000 per month per family for 12 months;
- Rs 2000 per month per family as annuity for 20 years, with appropriate index for inflation;
- If home-less, a constructed house (plinth area) on 150 square meters of house site in rural areas or 50 square meters in urban area, provided free of cost;
- A one-time 'Resettlement Allowance' of Rs 50,000;
- Rs.50,000 for transportation;
- Mandatory employment for one member per affected family or 2 lakh rupees

Some special provisions have been made for Scheduled Tribes and 25 infrastructural amenities are to be provided in the resettlement area, including schools and playgrounds; Health Centres; roads and electric connections; assured sources of safe drinking water for each family; Panchayat Ghars; Anganwadi centres under ICDS, providing child and mother supplemental-nutritional services; places of worship and burial and/or cremation ground; Village-level Post Offices, as appropriate, with facilities for opening saving accounts; Fair price shops and seed-cum-fertilizer storage facilities. Institutions and procedures have been suggested that would lead to greater transparency, stake-holder participation, third-

party evaluation and all possible avenues of natural justice in the process of land acquisition.

Private Purchase of Land

As stated earlier, Section 42 of the LARR Act deals with purchase of land through private negotiation. However, the Act only provides a "fixed cost" to the buyer by way of the individual awards covering Rehabilitation and Resettlement entitlements, that too if the project area is more than 100 acres in rural areas and 50 acres in urban areas. The Act does not propose to regulate in any way the discovery of the, market price of land i.e. an 'equilibrium' market price of land at which voluntary transactions can take place where both the buyer and the seller benefit. A price based on the current incomes from land is inadequate and how much of the potential rent can be extracted by the buyer and the seller is a matter of bargaining. Is there a case for the State to intervene in the process of price-discovery as well, assuming that land agents who certainly do not have a reputation for fair-dealing, would be front-line representatives of the buyers, with a possibility of market failure to their coercive methods?

On the other side, the so-called "holding out" problem has been spelt out several times in the past. Writing for the lay person in the book "An Economist's Miscellany", Kaushik Basu explains the concept of "holding out" and its consequences, somewhat tongue-in cheek in his use of capitalized alphabets in terms of Game theory as follows:

> *"We know that for big industrial projects, a large amount of contiguous land is needed. Getting some parts of this land and not others would make the project unviable. Suppose a large project is being considered by an industrialist T for which he needs to buy two plots of neighbouring land, currently owned by farmers M and B(I am trying to use letters that are more meaningful). Assume that the industrial project can generate gross profit of Rs 10 and the farms are fallow and yield no benefit to the farmers. Hence, this is clearly a viable project. If, for instance, T gives Rs 3 to each of the farmers, they gain (Rs 3 each) and T gains (Rs 4).Since, in reality, hundreds of farmers are likely to be involved, it is reasonable to assume that all the bargaining cannot be done simultaneously. I shall mimic this here by assuming that T has to strike a deal first with M and then with B. Assume that each farmer demands the maximum she can get within the limits of what the industrialist*

will be willing to pay. It in be proved that the project will not be undertaken. For ease of exposition, I shall assume that all payments are made in integers; in other words, there is never any payment in paisas. In the first stage, the bargain is between T and M. The argument will go through no matter what M asks for. Note that if M asks for more than 9, T will reject it, and if she asks for less than 1, it is not in her own interest. So let me simply assume that M asks for some amount between 1 and 9.Next—in stage 2—he talks to B, who knows that if she says no, the project will not occur. Recall that T needs both plots for the project to be viable. So, if B agrees to a deal, the profit generated is10, and if B does not, then the profit is 0. In brief, B has the power to hold up the entire project. So as long as B charges any amount less than Rs 10, it is in T's interest to accept the offer. Recall that whatever T spent in stage one is now sunk cost and cannot be recovered. Therefore, B will charge 9, and T will accept the deal. However, this means that over the two stages, T would have spent 10 or more acquiring the land and so his net profit will be zero or negative. Interestingly, we know this even without knowing the exact deal struck in stage one. Since a loss or, at best, zero profit is foretold for the industrialist, he will not start the process of negotiation with the first farmer. ***Hence, no industrialization occurs even though all of them could have gained from it".***

If private industry wishes to go in for private purchase of land less than 100 acres for industrial use in rural areas (and less than 50 acres in urban areas), it could do so without providing for any R & R under the Act if it does not have to go to the Government in a "holding out" situation. However, most State Governments would have other laws to come into the picture. In West Bengal, in rural areas, due to land ceiling laws and land-use favouring agricultural activity, the buyer would not able to hold more than about 25 acres without obtaining a clearance under the West Bengal Land Reforms Act, 1955 and would need to change land use in the land records. In urban areas, the buyer would have to look at zoning regulations under the West Bengal Town and Country (Planning and Development) Act, 1979, urban land ceiling under the Urban Land Ceiling Act, 1976 and various other provisions. The matter of price-discovery in such cases would be indirectly affected by the decision of the Government in this regard. However, if there is "holding out", the buyer can come to the Government only if his project provides" public goods or services" even if it is for private profit or, even more generally, if "the benefits largely accrue to the general public" and after obtaining the consent

of 80% of the project affected people. Some Governments, such as West Bengal intends, may not agree to land acquisition at all for private Companies. Thus, the incentive would be not to privately buy more than 100(rural)/50(urban) acres and not to have to go to Government. This may be possible for housing/ITES projects but not for heavy, large scale industries or even power projects. In all such cases, the State needs to play a role in protecting the interest of the sellers since the R & R element needs to be incorporated in the price-discovery of the land and some ground-rules need to be made on the compensation for those who are landless livelihood losers. This would have to be leveraged on the strength of the powers from the other laws mentioned above. The present value of the notional R & R and the notional award as per the Act needs to be the starting point of private negotiations and the State needs to regulate this. At the same time, measures to prevent "holding out" have to be taken, other than political or illegal pressures.

Let us take the case of private acquisition of more than 100 acres of land by a private entity. Under the Act, the buyer will upfront have a major "fixed cost" covering the R & R portion. In addition, he may have to go to the Government after obtaining the consent of 80% of the project affected people to prevent "holding out". This itself, would incentivize buyers to negotiate with the notional award as a "base price". Assuming that the seller makes a "rational choice", then he or she will be willing to part with his/her land if his holding out leads to achieving the maximum price the buyer would be willing to pay without rendering his project unviable.

The role of the State, even if it is unwilling to compulsorily acquire land for private industry, has to ensure that market forces work and the price-discovery which takes place without a "holding out" situation, is at a point greater than a base price, determined by the notional present value of the R & R and notional "award".

An enabling situation for this to happen would be for the State to declare a zoning/land-use policy for the entire State, with digital land-maps and computerized record of rights and valuations, based on sale records. The land-use policy would exclude agriculturally fertile areas and ensure that existing and planned future infrastructure in the State are in line with proposed areas earmarked for industrialization and urbanization. A private

entity would have to privately buy land for industrial or non-agricultural purpose only in the earmarked area for appropriate use. The State would then provide information on the base price and provide an enabling situation for price-discovery. Use of systems of competitive land auctions with simultaneous bidding (including electronic- auctions) with buyer and seller anonymity could provide for a fair market mechanism. The system in practice in Western India, especially in Gujarat leveraging town planning traditions may be utilized in this connection. Thus the State will need to legislate and to continue to play a major but different role, even in the case of private acquisition of land by private industry.

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An Approach To A Climate Change Policy For India

Shakuntala Doley Gamlin*

Introduction

Climate Change[1] along with state sponsored terrorism, nuclear proliferation, long-term global economic prospects, energy security, uncapped population increase, perceived inequities between regions (and countries), and poverty are some of the challenges that have been engaging the attention of policy makers across the globe. Although on the face of it each challenge / issue might appear apparently unique, inter-relationships among them or at least between some cannot be ruled out. For the purpose of this paper climate change issues alone have been addressed. Policy prescriptions emanating from such examination have been identified and indicated. Accordingly, the intention is not to draw up a complete policy document but to identify and point the spot light on major principles that could be considered for incorporation in any national policy document on the subject.

Background

The beginnings of the international response to climate change are generally traced to the coming into being of the United Nations Framework Convention on Climate Change (UNFCCC) in 1994, although the process for the same had commenced somewhat earlier in 1992. One hundred and ninety two (192) out of 194 UN member states, called Parties, ratified the Convention, thereby ensuring its virtual global acceptance. The Convention has as its objective the stabilization of concentration of atmospheric Green House Gases[2] (GHGs) at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system. Under the auspices of UNFCCC, Parties (192 UN member states) are to meet periodically at the Conference of Parties (CoP) to take the process further in pursuance of the Convention's objectives.

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Towards this end, CoP-3 at Kyoto in 1997 adopted a Protocol which came to be subsequently ratified although, most notably, the United States chose to keep out of it, citing national interests and the discriminatory nature of the Protocol. More or less universal acceptance of the Kyoto Protocol had stemmed from the fact that apart from developed countries choosing to take the initiative in taking steps for cutting down emission levels, it reiterated the overall mitigation strategy to be "in accordance with the principle of common but differentiated responsibilities and respective capabilities". Accordingly, developed countries collectively known as Annex-I countries took upon themselves the task to cut back their 1990 GHG emission levels by 5.2 per cent by 2012.

The situation with respect to country specific GHG emissions has changed somewhat since 1997, when the Kyoto Protocol was adopted. The United States, which for greater part of the twentieth century occupied the top slot as the largest GHG emitter, has recently been replaced by China. Alongside, GHG emissions of India and Brazil, among others, have also risen, although not as rapidly as China's. During CoP-15 at Copenhagen in 2009 India agreed to 'endeavour to reduce GHG emissions intensity of its GDP by 20-25 per cent by 2020', in relation to its 2005 level[4] as a part of the Copenhagen Accord.

Concerns

Several concerns have been articulated regarding the negotiation process currently underway for GHG mitigation which deserve to be addressed in a reasonable and fair manner in order that global efforts towards the Convention's objective can commence in the right earnest without any further loss of time. Some of these concerns are flagged below:-

First Concern: Without an agreement being reached on the global threshold atmosphere GHG concentration level and the time-frame by which that level might be reached, there can be no finality about negotiations being conducted before that date. The need for immediate mitigation measures being justified on the ground that no time need be lost during the intervening period is most likely to yield a piecemeal response, devoid of any long-term strategy, which might prove to be highly cost-ineffective in the long run. Accordingly, during the intervening period, mitigation obligations, if any, have to be on a purely voluntary basis for developing countries.

Second Concern: For facilitating a consensus to emerge on the global threshold GHG concentration level, it would greatly help if global cooperation were to be seriously considered in matters relating to climate change science, including climate change models. Concrete measures in this direction can assist in building confidence in the very foundation of the negotiations.[5]

Third Concern: National sovereignty over the choice of the fuel-mix most suited to that country's economy needs to be recognized. This would give the much needed flexibility in meeting mitigation obligations, if any, in a cost-effective manner.[6]

Fourth Concern: The right of developing countries to economic growth at rates considered necessary and attainable by them needs to be recognized. Accordingly, negotiators would have to take cognizance of this fact by delaying imposition of mitigation obligations on developing countries ormitigation compensation in any other reasonable and acceptable form.[7]

Fifth Concern: Negotiations should be kept free from promises of concessions. In this regard, technology transfer often promised during negotiations has not come to any fruition. Even, joint research & development that has been talked of has never really got off the ground.[8]

Sixth Concern: Traded carbon credit mechanism has not fulfilled the purpose for which it was envisaged. During negotiations at Kyoto it had been claimed that through the sale proceeds of carbon credits, developing countries would be in a position to fund the incremental cost of deploying cleaner technologies and that the purchase price of a carbon credit could be marginally lower than the cost of abatement of a similar quantity (associated with a carbon credit) in developed countries. This has not occurred due to a complete market failure. The scheme came to be loaded in favour of the buyers which witnessed the emergence of a buyer's market. In future negotiations, carbon credit trading can even be done away with .[9]

Seventh Concern: The promise of concessional capital flows from developed countries to developing countries for funding clean technology and energy efficiency projects does not seem to have fully materialized. Such flows, apart from being limited, have tended to be somewhat tied. [10]

Eighth Concern: After a consensus has emerged on the global threshold atmosphere GHG concentration level and the time frame by which that might be reached, country-wise GHG mitigation obligations have to be determined in keeping with UNFCCC's overall mitigation strategy, referred to earlier. In this regard, among other things, uniform per capita GHG emission entitlements have been suggested across countries. In accepting mitigation obligations, developing countries should not factor in promised flows of clean technology, concessional capital or revenues that might be generated on account of carbon trading, if any. Such and other concessions, even if they were to fructify, should be considered as an additionality and in no way taken to prejudice decision making in favour of higher developing country obligations. Further, there must be a clear recognition of sovereignty in the manner in which developing country obligations are to be met.

If these eight major concerns were to be recognised and addressed in a reasonable, fair and just manner, there should be very little resistance to arriving at a global settlement on climate change.[11]

Principles

UNFCCC member States, or at least those belonging to the developing country group, need to recognise the importance of the eight major concerns listed above in order that there is some degree of congruity in their approach to climate change negotiations. It is this congruity that could eventually facilitate in paving the way for arriving at a global settlement on country-wise GHG mitigation obligations, in keeping with the Convention's aim as well as strategy. An attempt has been made to convert these concerns into principles for incorporation in national climate change policy document(s), as under-

First Principle: India (and other developing countries) will not take upon themselves any atmospheric GHG mitigation obligations of a binding nature till such time as a consensus were to emerge and an agreement reached on the quantification of the Convention's objective of stabilizing concentration of atmospheric GHGs at a level that would prevent dangerous (human induced) interference with the climate system. Obligations taken, if any, during this intervening period will be purely of a voluntary nature, accepted without any coercion or inducement or both.

(The adoption of such a principle apart from hastening the negotiation process, should yield a clearer picture of the phenomenon of climate change

which in turn would prepare the ground for a better and a more definite understanding of the issue. As already mentioned in the 2nd Concern, it would greatly help if significant concrete measures were to be taken for cooperation in climate change science et al.)

Second Principle: Choice of the fuel-wise is strictly a national concern in order that the most cost effective fuel-mix can be adopted, in keeping with national policies and priorities and international obligations, if any.

(Assertion of this principle is considered essential to ensure that focus on sovereign activities is not lost sight of and sub-optimal options unwittingly chosen.)

Third Principle: India (and other developing countries) exercise their right to growth to attain levels of living commensurate with national aspirations.

(Atmospheric GHG concentration rise during the past 200 years or so is attributed mainly to fossil fuel led growth in the west. Other regions too need to develop and at present no economically viable option to fossil fuels or nuclear energy for sustaining growth seems to have emerged. Developed countries will need to recognise both these facts during the negotiation process.)

Fourth Principle: GHG mitigation obligations, if any, would be accepted without factoring in promise of technology transfer, concessional capital flows, or revenues from carbon trading. Each country will meet its own GHG obligation, if any, without resorting to passing them on to any other country or countries through concessions of any kind.

(It need to be ensured that developed countries do not use concessions during the negotiation process to either pass on a part of their obligations to developing countries or use them as a bait to extract higher obligations, than otherwise would have been conceded. Developing countries have to be realistic and learn to accept ceteris paribus conditions in technology transfer et al. Enunciation of such a principle which emanates from the principle of equity itself is considered essential for incorporation to create conditions for fair play during climate change negotiations.)

Fifth Principle: National GHG mitigation obligations will be accepted in accordance with the principle of common but differentiated responsibilities and respective capabilities. Further, GHG emission entitlement on per capita per annum basis will not be less than such entitlement granted to a developed

or emerging economy UN member state. Developed country obligations will not be exchanged for concessions, if any.

(Acceptance of this principle will require a concerted effort on the part of developing countries).

Challenges

First Challenge: To arrive at a reasonable, fair and just settlement, acceptable to all UN member states, which while ensuring the attainment of the Convention's quantified objective will concede the five principles enunciated above to developing countries.

Second Challenge: That national GHG mitigation obligations shall also not adversely impact in any significant manner export oriented manufacturing taking place in some developing countries, notably China. International division of labour, a consequence of globalisation, has led to relatively lower tech manufacturing being shifted to such countries, with associated GHG emissions. The question now arises in whose account should these emissions be taken, i.e, those of the manufacturer or the consumer. This implies that emissions might need to be determined for which consumption of goods and services is the basis and not goods and services produced. Accordingly, there could be demands that warrant national emissions to be adjusted on this and other accounts. In that case there is a possibility of an adverse impact on global trade and investment, which in turn could adversely impact the global economy. In what manner these contradictions would be addressed remains a challenge.

Third Challenge: That the settlement shall not come in the way of raising levels of living across the globe, in keeping with national aspirations and capabilities. This would be a challenging task given that economically viable alternatives to fossil fuel are yet to be found, as already mentioned before. Renewables have not lived upto expectations. Except for wind and that too limited to a few countries endowed with wind potential, no other renewable source, unless hydro is included in the category, has been deployed on a large scale anywhere. As for India, despite its geographical size, wind potential has been estimated at only 5000 MW, considering Class III (with wind power density between 300 - 400 Watts per metre square) sites and above, in keeping with global practice. Even if the unviable Class II sites which yield an annual

capacity factor not greater than 15 per cent were to be considered the potential would still be limited to 45,000 MW or thereabouts. The position in respect of solar power is somewhat different. While potential is high, solar power cost per kWh still hovers around Rs.15 (US 30 cent) or more and with battery back up for off-grid applications at Rs.22.50 (US 45 cent). Projections on solar power cost reductions, although optimistic, have not kept along the indicated trajectory. Despite high costs, India has embarked upon an ambitious programme for development and deployment of solar power. Having said this, the options for meeting future energy needs for sustaining growth remain limited, unless disruptive energy technologies are around the corner.[12]

Fourth Challenge: Responsibility for the subject matter of energy is spread over several Ministries/Departments in the government of India that it is difficult to visualise how a competent and cost-effective strategy for mitigation will be evolved and implemented. With each side having the tendency to pull in its own direction, there is every likelihood that sub-optimal strategies and programmes would evolve. The Planning Commission has been attempting to play the role of mediator and coordinator in energy issues by default and this role at best can be described as ad hoc. India will have to seriously consider placing energy under one umbrella or devise an integrative mechanism that can address issues in a suitable manner. How this can be achieved is not clear.

India's Mitigation and Adaptation Strategy

The Copenhagen Accord emission intensity reduction target has been shown to be achievable on a business as usual scenario. Accordingly, the country need not take any special steps for this purpose. In June, 2008, i.e, before the signing of the Copenhagen Accord, a National Action Plan on Climate Change (NAPCC) was launched with the aim of ensuring growth that would address climate change mitigation and adaptation concerns as well. Alongside, a self-denying cap has been placed whereby India's per capita GHG emissions would at no time exceed those of developed countries. The plan envisages the setting up of eight National Missions, running through 2017. One of the eight outlined is the Jawaharlal Nehru Solar Mission.[13] The other energy mission is required to deal with energy efficiency.

The Missions are running independently of one another without a framework for integrating their work or even without oversight. The Missions have been placed under respective Ministries/Departments who have been given a free hand in shaping their objectives and strategies. The primary aim of the solar mission seems to have gravitated from development to deployment, supported with a slew of fiscal and financial concessions, being provided by a host of bodies. The argument being put forward in favour of deployment is that its enhanced levels would lead to price reduction through economies in scale in production which is fundamentally flawed.[14] It would be interesting to watch the progress of the Solar Mission in respect of its original primary aim of developing solar power generation technologies that would effectively compete with conventional power technologies during the next two decades or so.

The time to review the aim, purposes, strategies and implementation schedules of the eight Missions may have arrived to make them more relevant and focussed in order to prepare the country for the imminent change, which was the original underlying purpose for setting up these Missions.

Summing Up

Climate change negotiations have a strong diplomatic element to them. Diplomacy is all about advantage. Thus, apart from the felt need of saving the earth from the rigours of the elements, each country would naturally attempt to maximise advantage. Not only will jackets be removed and sleeves rolled up (as at Copenhagen), but much more can be expected. The challenge will be to keep the negotiations on track so that a reasonable, fair and just settlement can be arrived at. This is only a part of the problem. The other major part, that of keeping the engines of growth going with lesser GHG emissions, is likely to prove even more challenging. What cooperation mechanisms can be put in place for finding viable substitutes for fossil fuel is not clear. A situation is fast emerging where truly only the fittest will thrive, for which preparations must begin. The sooner this message were to reach leadership across all levels of civil society – political, business, scientific, et al, the smoother will be the transition to a world whose growth is sustained on GHG free energy.

Strategy for Development of Agriculture in North-Eastern Region

Ram Tirath Jindal*

Introduction

North-eastern India consists of Assam, Arunachal Pradesh Meghalaya, Mizoram, Nagaland, Tripura and Sikkim covering 7.9 per cent of geographical area and 4% of population of the country. More than 64 per cent of the total geographical area is covered by deciduous forest. The region is known for its huge biodiversity in terms of flora and fauna. Geographically, Arunachal Pradesh is the largest state in the region, but is sparsely populated. Assam is the second largest state in area having about 70 per cent of the region's population.

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Most of the agriculture in the northeastern region is rain-fed. The average annual rainfall in the region is 2300 millimeters, ranging from 1400 to 5500 millimeters across states. Most of the rainfall is received during June to September. The normal temperature varies between 18°C to 32°C during summers and from 0°C to 22°C during winters. Land is fertile and water resources are abundant. The region, in general, is characterized by uneven landscape, limited arable land, low population density, low urbanization, and poor infrastructure. Around 56% of the area is under low-altitude (valley or lowland), 33% mid-altitude (flat-upland) and the rest under high-altitude (upland terrace).

The economy of the North Eastern states is mainly rural and agrarian. The soil, topography and climate are suitable for cultivation of a wide variety of agricultural and horticultural crops. Mostly the agricultural and horticultural produce is sold in the local markets in the form of primary produce without any significant value-addition.

Purpose of the Strategy Paper

The paper aims at making certain recommendations for enhancing the productivity and production of various crops in the NE-Region, making agriculture remunerative to the farmers and to ensure higher income levels and inclusive growth. The paper also aims at making some suggestions to convert weaknesses of the region into opportunities.

Assessment of Current Situation

The pattern of agricultural growth has remained uneven across various parts and crops. The NER continues to be a net importer of food grains even for its own consumption. In spite of covering 7.9% of the country's total geographical area, NER produces less than 3.5% of the country's total food grain production. Agriculture provides livelihood support to 70 % of the population of NER.

The extent of cultivable land in the NE region varies from state to state. Land is a critical resource in many of the NE States, and availability and management of land for agricultural activities are essential aspects for raising the region's overall agricultural production and productivity.

Geographical Land, Population [2011 Census] and Net sown area

State	Geographical Area ('000 Ha)	Population (No.)	Net Cropped Area ('000 Ha)
Arunachal Pradesh	8374.3	1382611	210
Assam	7843.8	31169272	2810
Manipur	2232.7	2721756	235
Meghalaya	2242.9	2964007	235
Mizoram	2108.1	1091014	93
Nagaland	1657.9	1980602	316
Sikkim	709.6	607688	108
Tripura	1048.6	3671032	280
All NE	26217.9	45587982	4287.0
All India	328726.3	1,21,01,93,422	

NE-Region has remained economically backward, though there is ample potential for development due to the presence of abundant natural resources. Valleys are rich in organic matter. Traditionally, farmers follow mono-cropping practice in rain-fed agriculture, where rice is the major crop occupying more than 80% of the cultivated area, followed by maize. Presently, the cropping intensity of NE-Region is about 120%. It is apparent that about 80% of the areas remain vacant during the Rabi season due to severe water scarcity, as most of the rainwater flows as run-off through sloppy land.

Poverty is rampant in North East. The contribution of agriculture to state domestic product is not substantial. Growth of agriculture GDP is also low. The agriculture sector, including crops, animal husbandry, fishery and forestry, contributed 26% to the North-Eastern region's gross domestic product (GDP) in 2008-09, whereas the same was 37% in 1993-94. Net cropped area of about 43 lakh hectares is cultivated by about 52 lakh cultivators. Therefore, most of the farmers are small and marginal farmers.

STATE	GROWTH OF AGRICULTURAL SECTOR OF NORTH-EASTERN STATES			
	Share of agriculture in GOP		Annual growth rate. 1993/94 to 2008/09	
	1993/94	2008/09	Agricultural GDP	GDP
Arunachal Pradesh	43 4	25 8	1.25	5 34
Assam	39 4	279	2 48	629
Manipur	35 5	23 6	3 30	580
Meghalaya	25 3	195	482	7.35
Mizoram	29 6	139	058	6 19
Nagaland	244	28 5	921	643
Sikkim	343	170	2 63	778
Tripura	35 3	22 4	4 84	8 67
Northeast	368	25.9	3 12	6 55

By and large practices in agriculture are traditional. The agricultural productivity is very low, irrigation facility almost non-existent in many of the areas and consumption of fertilizer is also extremely low in the region. The average fertilizer consumption varies from 5 kg/ha to 69 kg/ha across states. The availability of institutional credit to the agricultural sector is extremely low. Road infrastructure is also poor.

Rice is the major crop in the region. The total production of rice has been 58 lakh tonnes in 2010-11 and the average yield is about 1600 kg/ha. However, the silver line is that there has been increase in productivity in the recent period. The state of Assam has increased average productivity of rice from 1349 Kg per hectare in 2006-07 to1969 Kg per hectare in 2010-11, Though it is still lesser than national average of 2240 Kg per hectare in 2010-11.

The rice-based agriculture system has failed to provide required household income-security. Rice is a three-season crop, viz, autumn (Ahu), winter (Sali) and summer (boro) in Assam, Winter rice accounts for more than two-thirds of total rice area, Boro rice has also gained popularity in Assam in recent years. Boro rice is a low risk option with yield 30 to 40 percent higher than the winter rice. It has increased cropping intensity, leading to a situation of surplus production in certain parts of the state of Assam.

Shifting Cultivation

The practice of shifting cultivation commonly known as Jhum is a unique feature of the region. This covers nearly 20 lakh hectares area and supports 4.5 lakh Jhumia families. The system faces criticism due to its low productivity and environmental diseconomies.

Crop Diversification

Certain other crops like maize, pulses and oilseeds are also grown in the region. Their share varies from state to state. A large number of Households in the NER practise crop diversification by growing multiple crops as well as livestock, fishery, piggery, etc. High-value crops like fruits and vegetables, oilseeds, spices and nuts are also widely grown in the region. Fruits and vegetables occupy the second place covering 12% area next to rice. Area under other crops like fibres, sugarcane, rubber, sericulture, coffee, arecanut and coconut is also growing. Floriculture is also expanding rapidly. But, a huge potential remains untapped.

Share of crops in gross cropped area

	Arunchal Pradesh	Assam	Meghalaya	Manipur	Mizoram	Nagaland	Tripura	North-east
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rice	42.8	65.9	35.0	69.5	52.1	42.2	70.1	61.5
Maize	13.6	0.5	5.5	1.9	7.7	11.4	0.6	2.4
Cereals	65.3	68.5	42.6	71.4	59.7	58.4	71.1	66.2
Pulses	2.6	3.0	1.5	3.2	3.8	9.0	2.5	3.3
Oilseeds	8.7	8.1	3.1	0.6	4.6	15.3	3.3	7.7
Vegetables	7.2	4.6	13.6	7.0	5.4	6.9	9.2	5.8
Fruits	13.7	2.9	8.3	11.9	16.8	7.5	8.3	5.1
Condiments and spices	2.5	3.4	7.8	5.2	8.8	2.2	2.5	3.7
Tea	0.0	7.0	19.5	0.4	0.0	0.0	1.9	6.1
Other crops	0.0	2.4	3.5	0.3	1.1	0.7	1.2	2.1
All Crops	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

There are general favourable conditions for plantation crops. Among the plantation crops, the cultivation of tea, rubber and coffee are of the most

commercial/corporate significance. Total area under tea is the highest in the country at 2.36 lakh hectares, producing over 55 per cent of total production in the country. Recently, the government intervention in Assam has enabled some of the entrepreneur farmers to undertake tea cultivation. Due to high prices of tea in the market in recent years the entrepreneurs have gained financial benefits. .

Livestock is an integral part of the regional economy. A variety of livestock are available in the entire region. The land man-livestock ratio in the region is higher than the same in the national level. However, most livestock are of nondescript type and the yield rate is low. Thus not only the milk and milk products but also the meat and meat products are in short supply in the region.

Poor infrastructure like roads and markets, natural calamities like floods, submergence, landslides, soil erosion, etc. result in low and uncertain agricultural productivity. The low utilization of technology in agriculture has further reduced the ability of the farmers to cope with high risks in production. About 35 per cent of households of NER are living below the poverty line. The lack of income opportunities has perpetuated the worst form of poverty.

Agriculture and horticulture in the north-eastern region of India have considerable potential to grow and contribute significantly to the overall economic growth. Lack of system-specific technologies, poor infrastructure and underdeveloped markets, however, restrict the realization of true potential of agriculture.

The **salient features** of the existing scenario can be summed up as under:

Swot Analysis Strengths

Water

Large no. of rivers, streams, and other water bodies with perennial flow of water in the region, potential for irrigation, hydropower, water transport, fishery etc.

Manpower

About 52 lakh experienced farming families and huge agricultural labour.

Mineral Resources

There are abundant mineral resources in the region.

Rich Productive Soil

Soils are suitable for huge diversity of crops including plantation crops, horticulture & floriculture.

Unique Germ Plasm of some Species

Some of the plant species have distinct germ plasm and attract demand from outside.

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Weaknesses

Isolation

- Poor economic condition of the farmers.
- Recurring natural calamities like floods and earthquakes. Degradation of prime agricultural land.
- Small size of operational holdings. About 86% of the farmers in the major state i.e Assam are small and marginal.
- Traditional agricultural practices, low adoption of modern varieties, and low productivity.
- Domination of a single crop of rice.
- Poor contribution of other crops, livestock, fish, and silk to the economic position of the farmers.
- Non availability of genuine planting material within easy reach of the farmer.
- Dependence on rains due to poor assured irrigation.
- Low consumption of fertilizer varying from 2 kg/Ha to 67 kg/Ha against national average of 129 kg/Ha.
- Negligible use of micro nutrients. Applied in only 3% of the net cropped area.
- Availability of farm power – very low 0.70 Hp per hectare in Assam against national average of 1.20 Hp per hectare. Position in other states of NE is even worse.
- Weak Marketing Infrastructure: Majority of villages in the region are still not connected with metalled roads. Most of the markets do not have basic infrastructure.
- Poor flow of Institutional Credit: 82% of farm families are deprived of

agriculture credit even in Assam. Worse is the case in rest of the states of NE. Banks are reluctant.

- Negligible agro-processing and post-harvest management infrastructure.
- Poor public service delivery system.

Difficulties in communications and transport of inputs and produce.

Huge Cultural Diversity

Large no. of tribes, subgroups, multiplicity of ethnic groups, diversity of language and dialects etc.

Traditional Practices

Shifting cultivation engages 16 per cent of the available land area and 4.5 lakh *Jhumia* families. Reduced Jhum cycle is a deterrent to local ecosystem.

Lack of Assured Irrigation

This leads to low cropping intensity, hence low production.

Non Availability of Quality Planting Material

The region has to import quality planting material from rest of the country due to lack of appropriate institutions and arrangements within the region.

Small Land Holdings

Around 85 percent of the farmers are small and marginal.

Low Farm Power

Average farm power is much lesser than the national average. Assam has achieved 0.70 HP per hectare against national average of 1.29 HP per hectare. Other states have lagged much behind.

Poor Credit Flow

About 80 per cent farmers are not able to access institutional credit.

Poor Market Infrastructure: Poor connectivity & most of the markets lack basic facilities.

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Opportunities

Potential of International Trade

The region is surrounded by international borders on all sides.

Diversification of Production:

Scope for agro-based industries based on horticulture, tea, rubber, jute, oilseed etc.

Organic Produce

Due to chemical free cultivation and traditional practices the produce is organic and can fetch a better price.

Threats

Natural Calamities

Floods, earthquakes, cyclones, etc. Insurgency and disturbances in law & order situation, cause disruption in backward and forward linkages.

Strategy

In order to address the aforesaid weaknesses of agriculture in North East India, following strategies are suggested:

- **Enhancing Productivity of various Crops**

  This would be the most important step towards remunerative agriculture and higher income levels of farmers. This will also ensure food security in the region. Productivity of most crops including food grains, fruits & vegetables are much lesser than their national average. The low levels of yields in the region are due to lack of availability and adoption of improved varieties of, inputs and agro practices. Therefore, the governments in the region have to ensure availability and extension of improved varieties and other inputs like fertilisers/ micronutrients and practices. Technological changes can be ensured through better research-extension linkages. The public service delivery system is required to be strengthened through better monitoring.

- **Increase in Cropping Intensity**

  Cropping intensity in the region is very low. Mono-cropping is still prevalent in many parts. There is huge potential for diversification of crops and multicropping. This can be realised through research & planning on terrain specific cropping pattern and investment in water management. The increased intensity can bring about a significant change in the income levels of farmers thus making agriculture sustainable.

- **Development of means of Irrigation & Installation of more Farm Power**

  The region is rich in water resources but water is not available for agriculture in most parts particularly in winter season. Therefore it is essential to invest in construction of water bodies, rain water harvesting

structures, dug wells and tube wells so as to ensure availability of water for agriculture during lean season. Farm power being very low in the region makes the operation inefficient. Therefore there is need for enhancement of level of farm power with low cost technology.

- **Strengthening Agro-Processing and Market Infrastructure**

  The region has a very high potential of growing fruits, vegetables and flowers. Such crops are not picking up desired pace due to lack of facilities for agro processing and market network. However, their demand has been growing very fast. Vegetable and flower cultivation is labour intensive but provides much better returns to the producer. There is need to support the process of diversification through investment of resources in markets, infrastructure, agro-processing industry, cold storage, etc. The farmers must be facilitated to sell their produce at remunerative prices. The producers are required to be linked to markets and cost of transportation of produce to markets must be minimised.

- **Ensuring Institutional Credit**

  Since flow of institutional credit in the region has been dismal, there is need for intervention of the government at various levels. Banking facilities are still not adequate in most parts of the rural areas. Wherever banks have come up, they don't have required manpower. Leaving aside a few banks, most others are not inclined to extend credit to the farmers. Even in case of Assam, the agricultural credit in 2009-10 was 0.2% of all India GLC. Only 18% of farmers were provided institutional credit. In 2008-09, the extent of credit in Assam was Rs.2626/- only per hectare against all India average of Rs.15379/- per hectare. Situation in this regard is worse in other states. Our experience has revealed that the procedure adopted by banks is so much cumbersome, that the farmers prefer to avail borrowings from the private money lenders though the same are extremely expensive. Resultantly the farmer is not able to come out of clutches of poverty and fails to invest in better inputs and technology for agriculture. Immediate attention of the government is absolutely essential to resolve this problem.

Implementation Plan

Some suggestions for Implementation

In order to achieve the objects of this paper, enhance farm incomes & achieve inclusive growth in NE-Region, some suggestions are made below:

- **Institutional Credit**

  There is a need to facilitate flow of institutional credit through regular interaction with banks, credit melas, and motivation to the farmers to avail and return loans in time etc. Formation of JLGs has been helpful in facilitating banks to extend credit to the farmers. Once the farmer is able to have access to the low cost credit, he will be able to go for investment in technology & improved agricultural inputs and thus increase productivity.

- **Quality Seeds and Quality Planting Material**

  To ensure availability of quality seeds and quality planting material within the reach of farmers, the state machinery has to be proactive. Except for 2 or 3 states there is no seed certification agency in the region. The seed certification agency of Assam is also not functioning well for want of resources. Therefore usually there is shortage of certified seeds in the markets. Most of the times farmers have no choice but to go for low quality seeds. Attention of authorities is required to activate the seed certification agencies in the region immediately. The state seed farms should be utilised to the best extent for production of quality seeds. Further, production of quality seeds can be encouraged through implementation of seed village programme in a big way. Farmers are required to be educated for seed treatment to reduce incidence of plant diseases.

  As regards quality planting material for horticulture; the state agencies have to approach appropriate sources. Many of such sources are located outside the region. Sources for quality material have to be tapped well in time before the sowing season for respective crops. Progeny orchards in the region have to be revived, activated and utilised for best possible service delivery.

- **Irrigation and Water Management**

  There is a need for investment in irrigation and water management. In plains of NE, water table of ground water being very high, there is a huge potential for utilization of underground water. In case of Assam, against a potential of 8.80 lakh shallow tube wells for coverage of potential of 17.60 lakh hectare area, only 2.80 lakh shallow tube wells have been installed till March 2011, mostly with partial government assistance. Investment

of govt. in this sector as assistance to farmers has been extremely fruitful in increasing production and productivity of the major crop of rice substantially in last few years. Similarly, investment in water management, water harvesting structures and construction of water bodies coupled with facility of pumps will go a long way in enhancing farm incomes and production.

- **Development & Promotion of HYVs & Flood Resistant Varieties**

  Though some varieties are already available, yet further research to develop better ones is to be emphasised. As regards promotion of these varieties, the extension system is required to be strengthened. A large no. of posts in the departments of agriculture is lying vacant in various states of NE-Region. The same should be filled up on priority. Demonstration is perhaps the best method of extension. Therefore, large scale demonstration be encouraged. Mass media & Kisan Call Centres have to be involved more and more.

- **Certification of Organic Produce**

  The states like Arunachal, Sikkim and Nagaland, and parts of other states where there is no use of chemical fertilizer, should go for certification of organic produce. The same can fetch much better price if market links are established.

- **Promotion of Greenhouses**

  State of Sikkim has done remarkable work in floriculture and cultivation of high cost vegetables under protected conditions. This can be replicated in other states of NE very easily. The protected cultivation is helpful in achieving higher returns. Initially public funds have to be invested for this cause as partial assistance to farmers as the farmers on their own are not financially capable to take up protected cultivation.

- **Soil Testing Facilities & Soil Health Management**

  Already a no. of soil testing laboratories has been established in some parts of the region. Still some more are required in the hilly states. Extension network is required to be geared up for optimum use of these labs and educating the farmer for usage of optimum dose of fertilisers and micronutrients.

- **Low Cost Technology**

  Since most of the farmers in the region are small and marginal and the

level of farm power is very low. There is an imperative need to go for low cost technology. For example, small power tillers instead of tractors are found to be more useful in Assam. Similarly, conoweeders, sprayers, small threshers, electrically driven pump sets etc can be provided with partial government assistance to empower the farmers. Some equipment banks for renting out high cost equipment like tractors with rotavators, harvestors etc. can be of tremendous use to the farmers to save the crops from vagaries of nature at the stage of crop maturity and to make the fields available for next crop in time. The experience of use of rotavators in certain parts of Assam have been found to be very useful in increasing the cropping intensity. Further there is a need for development of suitable low cost technology for hilly tracts.

- **Treatment of Highly Acidic Soils**

  In certain parts of the region the soils are highly acidic having pH less than 4.5. Our experience has indicated that treatment of such soils with lime particulary in boro & rabi cultivation has been helpful in increasing the productivity of rice and other crops.

- **Marketing Infrastructure**

  Since majority of villages in the NE region are still not linked with roads, some methodology is required to be developed for taking the farm produce to the markets at low cost of transportation. We have found that providing of auto vans with partial government assistance to the groups of farmers in the form of grower societies has been helpful. Further the markets have to be equipped with certain basic facilities like weighing machines, cleaning machines, pucca yards, sheds etc. Immediate attention of government is required to improve these facilities to ensure marketing of agri-horti produce at fair prices. Transportation subsidy is also useful to some extent to enable the farmers to carry produce to appropriate markets particularly when the marketable surplus is small & the farmer is located in remote village.

- **Storage and Cold Storage**

  The region needs facilities of storage and cold storage to enable the farmer to wait for better prices in the market.

  In this regard, our experience has revealed that existing schemes of Govt. of India are not able to attract substantial investment in this sector in NE

region. Therefore there is a need to revisit the schemes for making the same little more attractive.

- **Agro-Processing**

  The region needs agro-processing industry very badly as huge surpluses of horticulture have to be sold out by the farmers and very low prices. The existing schemes of Govt. of India could not succeed to attract substantial private investment in this sector. Therefore there is a need for rethinking on the same.

- **Shifting Cultivation**

  All efforts to eliminate this practice have not worked satisfactorily. The practice is followed by about 4.5 lakh jhumia families. Instead of eliminating, the practice can be used for higher productivity if better quality seeds & appropriate technology is applied.

- **Integrated Farming**

  Combination of food crops with livestock, fishery, piggery, forestry and horticulture will help enhance the income levels especially in the states like Arunachal Pradesh & Mizoram where the cultivable land is much lesser.

- **Cluster Approach**

  At present, the surplus production are scattered, therefore bulk marketable surpluses are not available to encourage processing industry & bulk trade. Cluster approach be encouraged particularly for horticultural crops so that perishables find ready bulk buyers.

- The hilly terrains & slopes may be used for plantation crops such as rubber, tea and forestry.

- **Disease and Pest Control**

  In addition to seed treatment, integrated pest management is required to be promoted.

  Whole hearted efforts of public service delivery system will certainly ensure much better agriculture in the NE-Region.

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Urban Planning: Some Issues and Lessons Learnt from Master Plan of Jaipur City

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Urban Planning: Some Issues and Lessons Learnt from Master Plan of Jaipur City

Urbanisation

Increasing urbanization is a reality creating enormous pressures on the modern day planners. "Urbanization" is increase in the proportion of people living in cities. It grows because people move from rural areas to urban areas as part of the development process. Some times rural areas in the periphery of big cities become part of the city with its expansion or are developed as satellite towns. Rural to urban migration is happening on a massive scale in the 3rd world countries including India due to population pressures and lack of resources in the rural areas, i.e., the "push factor". People living in rural areas are also "pulled" to the city in the hope that the standard of living in urban areas will be much better there.

Globally, the human population of the planet is rising at the rate of 74.2 million per year or 141 people every minute. The growth of the urban population is itself 75 million people every year. The 3.4 billion urban population recorded in 2008 is expected to become 6.4 billion by 2050. Urban areas will account for two thirds of the human population.[1]

Urban scenario in India

Only 28% of India's population was urban in 2001. The urban population is likely to be around 32% in 2011 and India's urban population is likely to reach 41% by 2030. India's cities have become the gateways to the country's economic growth and opportunities-cities occupy 2% of the landmass of the country while contributing 65% to its GDP – and the waves of urbanization

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1. ICLEI "Global Re-design of Urban Governance 20090830"

have become larger and stronger. At the turn of the millennium 305 million Indians lived in over 3,700 towns and cities, spread across the length and breadth of the country. This comprised 30% of its population, in sharp contrast to only 60 million (15%) who lived in urban areas in 1947 when the country won its independence.

During the last fifty years the population of India has grown two and half times, but urban India has grown nearly five times. In numerical terms, India's urban population is second largest in the world after China, and is higher than the total urban population of all countries put together barring China, USA and Russia.[2]

Beyond numbers, the trend of urbanization can be analysed by the three contributing factors: organic growth of urban areas, in-migration, and re-classification of villages to towns based on population growth. The Census data indicate that between 1991 and 2001 in-migration contributed 46.2% of population growth in 45 of the major cities. Of these the three top reasons were work, household and marriage. Migration for work of these 45 cities was 32.6%.

Challenges of Urbanisation

As the city grows beyond its natural carrying capacity, it suffers from deteriorating infrastructure and services. To reduce the adverse effects of urbanization, urban planning becomes the basic need to minimize these ill effects. Urban planning can be defined as the design and regulations of the use of space that focus on the physical form, economic functions and social impacts of the urban environment and on the location of different activities within it. Urban planning has to ensure sustainable development in the midst of increasing population and growing pollution by utilization the present resources keeping in mind the future needs of the society so as not to exhaust the limited resources. It also has to preserve the ecological balance.

However, now a days, urban planning takes all aspects of a city into consideration and has become more complex. It includes plans for safety, aesthetics and common sense placement of everything e.g., housing, industrial areas, commercial areas and recreational areas etc. Now goods for attractive architecture for city buildings are put into place and pleasing green spaces are planned. Good urban planning gets utilities like schools in

[2] " Jaipur Master Plan 2025" by Swati Ramanathan

the neighborhood, hospitals in central locations, electric supply, sewerages, drainage etc, which have all become integral part of present day urban planning. Good urban planning is also reflected in terms of good high way planning, ring roads to avoid congestion in the town, traffic management, finding parking spaces, etc. Because so many disciplines make up the larger concept of urban planning, a group of urban planners is required now which includes, civil engineers, architects, landscape designers .electric engineers, business administrators and so on.[3]

Critical Issues

Urbanization is an integral part of the process of economic growth. Similar to most countries, India's towns and cities make a major contribution to the country's economy. With less than 1/3 of India's population its urban areas generate over 2/3 of the country's GDP and account for 90% of government revenues. Meeting the needs of India's soaring urban population is and will therefore continue to be a strategic policy matter. Critical issues that need to the addressed are:

- **Poor Local Governance**

  Decentralization is undoubtedly essential for improving the urban management by addressing local needs as directly as possible and to mobilize local resources to finance urban development regularly and speedily. However, most of the local bodies lack a modern planning framework. Building up these technical skills is major difficulty encountered by local authorities. The multiplicity of them also obstructs efficient planning and land use.

- **Weak Finances**

  Inadequate mobilization of local resources is a major obstacle in the satisfactory performance of their tasks. Local tax levying capacities are poor owing to the lack of organized collection and control system. House and land taxation legislations tend to be un-productive. Since traditionally, most of the ULBs are given grants from the State, people in these areas have also become used to such subsidies/grants and are not willing to pay the user charges for the utilities. This further puts the local governing bodies at the mercy of the State/Central Governments endangering their autonomy.

[3] http://www.wisegeek.com

- Inappropriate planning leads to high cost of housing and office space. Limitations of land and resources bind the ULBs as looking to the high prices of land, acquisition of it is opposed tooth and nail which delays the process of availability of land for various land uses, this further leads to slums where heavy population lives with sub-standard housing under poor living conditions. These slum dwellers are under constant fear of getting evicted also.
- **Critical Infrastructure Shortages**

  Lack of sanitation and service deficiencies include erratic water and power supply, sewerage disposal and solid waste management and woefully inadequate public transportation system.
- Though people migrate from rural areas to urban areas with growing changes, yet people do not get regular and permanent employment putting them in the vicious cycle of poverty and this also poses people to work at an early age rather than sending the kids to schools. Increasing crime in slum areas is one of the ill effects of urbanization.
- **Rapidly Deteriorating Environment**

  Global warming, air pollution, water scarcity and pollution and decline in forest cover, agricultural land and decline of wild life has resulted into a serious threat to the environment.

These critical features also pose challenges to urban planning to adopt to modern planning practices. India has rigid master plans and restrictive zoning regulations which limit the availability of land for buildings. There are building regulations also that limit urban density such as Floor Area Ratio (FAR) thereby reducing the number of houses available and pushing up property prices.

There are out dated Rent Control Regulations which reduce the number of houses on rent – a critical option for the poor. Such archaic laws put a fear in the minds of a house owner to give their house on rent as he is not sure of getting it vacated once he wants that.

Poor accessibility to Micro finance and mortgage finance limit the ability of low income group to buy or improve their homes.

Most of the services are delivered by the city Government with un-clear lines of accountability. Private players are not provided adequate opportunities to participate and provide these services or the environment is not conducive to service providers to recover the operation and maintenance cost.

Concept of user charges recovery is missing and independent regulatory authorities that set tariffs, decide on subsidies and enforce service quality are generally absent. Therefore most urban local bodies do not generate the revenues required to renew infrastructure nor do they have the credit worthiness to access capital market for funds. With change of the political parties with elections, policies also change and as such there is no stability. There is a need to decentralize the urban management to improve urban living conditions by addressing needs as directly as possible and enable city dwellers to participate in the city affairs.[4]

But it is also a political choice that involves re-organization of the political and administration responsibilities between the central and local authorities. There is often clash of interest between the Members of Parliament as well as of Legislative Assemblies with the elected people from the local Government. Most often they do not want to give more powers to the local authorities so that they do not become a threat for their future political ambitions. Therefore, there is a need to have a consensus at least on macro economic issues like land use plan, financial policy, credit regulations, education and health policy, land and tax legislations etc.

Urban reforms for good urban governance will have to take the following features into action :-

- Decentralization
- Municipal accounting reforms
- Model municipal laws
- Private sector participation guidelines
- National urban information system
- Urban environment
- Transparency in urban management
- Capacity building of ULBs

Learnings from the exercise of preparing the Master Plan of Jaipur City

In this backdrop now I will draw some of the lessons learnt from the exercise which we undertook in 2008 when I was posted as Commissioner, Jaipur Development Authority initially and then as Principal Commissioner, Urban

[4] http://go.worldbank.org

Development in Government of Rajasthan. Besides the assistance from the regular town planning wing in JDA, the drafting of the Master Plan document was done by **Mrs. Swati Ramanathan** which was later published in form of a book titled ***"Jaipur Master Plan 2025"***. I have drawn heavily from this book with consent of the author as most of the work was done during my time after lot of consultations amongst core team members at every stage.

Jaipur city and its surrounding region, reflects the demographic transition that is occurring in the rest of the country. Between the years 1961 to 2001, the population of Jaipur District grew from 1.5 million to over 5 million. In this period, the urban growth has been 1.8 to 2.5 times that of the rural growth. While in 1961, the rural population was little over one million people, the urban population was less than half a million people. Between 1991 and 2001, Jaipur recorded the highest urban growth of 59.35%. Currently the district population is estimated to be evenly split between rural and urban at about three million each.

By 2025 the Jaipur Development Authority (JDA) projections show that the current demographic distribution in the district in fact reverses, with the urban population becoming more than twice the size of rural population.

Jaipur's unique geography, positions it within the National Capital Region (NCR) area, benefiting from large national infrastructure projects and national economic development initiatives. It is serendipitously situated on the corridor between the national capital city of Delhi and the financial heart of the country-Mumbai and is en route to the emerging economy of Ahmedabad. Rajasthan has a historic opportunity to put its hat decisively into the ring of the NCR economic growth and investment pie.

The previous two master plans (1971-91 and 1991-2011) were mainly exercises on paper and viewed the city in isolation from the larger region that it is located in. There was no integration of Departmental Plans, no focus on spatial planning, land use conversions were very easy and there was lack of enabling statutes and policies. These master plans were limited to regulatory controls while they should be spatial plans that integrate political, cultural, social, economic and environmental plans with the planning of space.

The challenges to producing good master plans are not trivial. The process is highly technical, data driven exercise on one hand, and on the other, translates a lofty vision for the city on to physical space. Master Plans need to

be done differently in order to build cities that respond to the needs of its residents.

- What will be urban region – rural and urban – be like in a reasonable time frame, say twenty years, without planning?
- What will urban region-rural urban-be like in twenty years with planning?
- What is the anticipated urban growth? Where will we grow? How much urban land will we need? How much housing will we need? What will be the economic activity to sustain us? How many jobs will we need? How will we connect people and places? What environment and heritage will we protect/promote? Will we have enough water and power supply?
- What will it take to implement and enforce the master plan on the ground? In order to answer these questions as well as to create a plan vision for any city, what is useful is a Planning Paradigm - a methodology that will guide the process of preparation, implementation, enforcement of the master plan. Such a Planning Paradigm must have certain characteristics- it must be comprehensive in nature, address the needs of multiple stakeholders, have a sustainable view for the future, and address issues of implementation and enforcement.
- To what extent should urbanization be planned and directive and to what extent spontaneous?

Demographic Features of Jaipur District Rural and Urban Population Projections for 2025

		2001	2011	2021	2025
Rural	Village	26,59,004	29,78,897	33,76,590	35,35,638
Urban	Jaipur UA	23,22,575	35,80,688	55,19,208	64,95,000
	Other Towns	2,69,792	3,50,116	4,42,830	4,83,705
Total		52,51,071	69,09,701	93,38,628	1,05,14,343

As can be seen from the table the District population will have doubled from 2001 to 2025. What can also be seen is that the urban population will be twice the size of the rural population. The key question is where will this new urban population of 22 lakh people live. Answering this question is the strategic core of the MMDP 2025.

Jaipur's Urban Sprawl

In taking a regional approach, Jaipur's development can not be isolated from the development of the larger footprint of the district. The current urban development of Jaipur has been leap-frog in nature and in defiance of past planning boundaries. The plan area has continuously expanded in all directions to include more township proposals and economic developments in the rural periphery of the city boundary.

The JDA footprint has been increasing with more and more villages notified under the JDA region, primarily because of the far-flung nature of development taking place. This is an outcome of spiraling land prices in the city. As more urbanized land area is added, the density will reduce even more. The walled city has the highest density (average. 60000 persons per sq.km). The rest of the city (within the developed area of the city) averages a population density between 4000-12500. The peripheral area averages a low density of less than 4000 persons per sq.km. With the addition of additional land approved for development, the density has gone down further.

The expected population is 65 lakhs by 2025. At this level of growth, even at the lower range of the recommended density of 12,500, the total land area required is 520 sq.km. Adding larger public amenities of parks, universities, special economic zones, the further requirement can still be met within the current urbanisable land available.

This kind of growth has implications on both Jaipur city itself and on the district as a whole. In Jaipur, there are two key implications : first, to the cost of infrastructure delivery. Allocation for more urbanisable land will only increase the development burden on the state. as the city spreads in footprint, the density reduces. It is already at alarmingly low levels. For a current estimated population of 32 lakhs the city needs to service 600 sq. km of developed land with all network infrastructure-roads, water sewerage, power- and social infrastructure- schools, hospitals, banks, etc. At density of 5000 per sq.km as versus the desired 12,500 per sq. km, this is more than twice the cost. Key infrastructure projects such as the BRTS, Metro rail, which are dependent on high ridership, will not have the adequate catchments density to make them financially viable. The draft MDP 2025 proposes 1500 sq.km of urban area for an anticipated population of 55 to 65 lakh by year 2025. This will bring down the density even further to 4000 pa/ha as a best case scenario.

Based on population projections, there will be a growth of 57 new urban areas by 2025, in addition to existing 11 in the district, which will dramatically reduce the efficiencies of the density and scale increasing multi-fold the cost in providing social and physical infrastructure while increasing the risk to agricultural land and sensitive environments. The result will be significant variations in the quality of life that the 68 towns will offer, each with competing claims on the state coffer.

The unplanned growth will permanently erode the distinction between rural and urban areas and fabric of each. It will also fail on all three planning principles of the master plan viz.,economies, equity and environment. Having chosen the district as the regional plan footprint, the question that remains is where urban growth should be planned for. The three choices in this instance are :

- that Jaipur remain the single dominant economic engine and urban magnet in the district, with its continued growth over shadowing all other urban areas.
- that Jaipur would grow but so would other existing towns in the district that would act as counter magnets to Jaipur.
- that rather than focusing on existing satellite towns, brand new towns would be created in the district.

After lot of discussions we reached a consensus to have a blend of choice no. 2 and 3 and the overall strategy for our MMPD -2025 focused upon "creating a plan for the district development and encouraging distributed urban growth in a hub-and-spoke manner".

Parameters for Selecting the Proposed Satellite Cities

Having embraced the two planning imperatives, the first step in the plan preparations was identifying the new urban nodes which would be the counter-magnets to Jaipur City. The 12 proposed satellite cities (PSCs), viz., Bagru, Phagi, Achrol, Dudu, Narayana, Bassi, Phulera, Kishangarh Renwal, Chaksu, Shahpura, Kotputli and Chomu for focused urban development were selected on the basis of six parameters:

- Potential for economic sustainability
- Existing road networks
- Existing and anticipated physical infrastructure
- Strategic location for rural access
- Existing social infrastructure
- Low environment impact

Infrastructure Financing

It was also recommended that the availability of local governments to pay for the capital costs required to build urban infrastructure in Jaipur Metropolitan District will require a mix of the following :

- Own revenue of urban local bodies
- Debt financing from the market
- Private sector investment
- Unlocking land values

Urban Housing and Land Projections

Governments invariably attempt to address these through attempts at rehabilitation and relocation of the existing urban poor who live in informal housing that is located in public land around railways, drains, banks of water bodies etc. These efforts however have two short-comings: one the focus is on projects without defining an overall strategy to address the housing, services and livelihood needs-current and future-of the urban poor; and two, the provision of alternate housing does not recognize importance of access to jobs, schools, health clinics. Advocates of the urban poor and policy makers alike have ignored the importance of the master plan in addressing both. The continuing growth of slums and the associated urban degradation are in large measure the result of planning that fails to respond to the needs of the urban poor.

Therefore, the following recommendations were made:

- Provide adequate land for housing needs of all
- Provide good quality affordable housing with secure title
- Ensure affordable land availability
- Ensure affordable housing that has access to jobs
- Provide adequate infrastructure and services

Change in Land Use

The change in land use – legal or illegal- has been the bane of the past plans of Jaipur. And the land use pattern shows that the city has expanded beyond the 2011 plan boundary by another 69 square kilometers. This implies that master plan development.

controls are easily overturned, enforcement is lacking and the land markets are inefficient. With this unwanted urban sprawl the Public Sector has to pay a big price in terms of difficulty and costs associated in providing infrastructure provisions to these areas.

There is a section 90-B in the Rajasthan Land Revenue Act, 1956 whose Clause 3 warped the original intent, by allowing prospective use through surrender to government. In addition, 90-B sanction by JDA does not consider master plan land use prescribed in master plan by JDA. By law, any property owner can apply for a 90-B conversion and by law the JDA is required to approve a change in land use, irrespective of any contradiction to the master plan regulations. This is one of the most bizarre contradiction in government, where one arm of the department opposes the rules set by another arm of the same department.

These changes to land use have created rampant violations of development controls around valuable assets of the city that are now impossible to reverse and legalizing the violations is the only option. The impact has been considerable degradation of the public realm and to the quality of life in the city.

Policy Recommendations

(A) Plan Enforcement

Change in Land Use

- **Stipulate 90B sanctions in accordance to planned development prescribed in the Master Plan.**
- **Change in land use from Agricultural to non-Agricultural**

  Currently, the powers are given to the Revenue Authorities for authorizing conversion from agricultural land to non agricultural use in the Metropolitan Areas. This should be changed by amending the Rajasthan Land Revenue Act,1956, to provide that no permission of the Collector (i.e. Revenue Authorities) shall be required for change of use of agricultural land located within municipal boundaries (of a Municipal Council/Corporation). The power to permit such change of land use shall appropriately vest in the respective municipal authority (ULB i.e. Chief Executive Officer/Municipal Commissioner), which shall grant such permission only if the proposed change is in consonance with the provisions of the approved land use zoning and development control regulations framed under the sanctioned Development Plan of the concerned ULB.

Clarify JDA Act

Section 25 (Clauses 1,2,3) of the Act allows "subsequent modifications of

plans." This clause needs clarity about the modifications allowed. It was recommended to disallow modifications beyond the urbanisable boundary of the plan and stipulate higher bar for CLU that impacts four categories of public land :

- heritage zones
- environment and ecological zones
- agricultural land
- consequential changes to public amenities such as parks, playgrounds, shops etc.

Address the existing situation of illegal construction and building violations

These must be identified and classified in the following three categories: illegalities that have a significant larger public impact; illegalities that impact the immediate area but not beyond, illegalities that have little impact on public. Each must be dealt with differing degree of punitive measures. Only once the slate is wiped clean can plans be credibly enforced going forward.

Land Acquisition for Development

Equitable compensation policies should be defined to enable protection of heritage, agriculture and eco-sensitive land, and for any acquisition for new developments and for existing areas to provide for road networks and essential civic amenities. In the case of acquisition, a fair and transparent process should be incorporated for making the case of using such power in the interest of larger public good.

Compensation for Development Controls that Restrict Profitable Land Use

Prime urban land is going to be under restrictive zoning to protect heritage, environment and agricultural assets and even to control urban growth on corridors. Private owners will need to be provided incentives to adhere to the development controls. This is a policy that requires innovation and is of great significance to the entire country.

Resolving the Territorial Overlap

The roles of Jaipur Municipal Corporation and JDA are conflicting and at odds with the 74th Amendment to the Constitution of India which stipulates that

the function of planning must be with the local government. Not only is the JDA holding this function, the JMC's territory does not extend to the newer planning sectors. This area is under the administration of the state through the JDA. Hence JDA play the role of planner, enforcer and developer in some areas and in other the JMC plays the role of enforcer without having any say in the planning.

Implementing plans on the ground and notification of Land in New Planning Areas

The only visible option is to introduce a clear policy for land acquisition for infrastructure development that will be fair, transparent, participatory and equitable. It is also proposed to have Economic Development Zones (EDZs) along Jaipur's five radial corridors of connectivity, viz., Tonk Road-Shivdaspura Greenfield International Airport and Aerotropolis Cluster; Ajmer Road Services Cluster; Sikar Road Urban Agriculture Sector; Delhi Road Hospitality and Tourism Cluster and Agra Road Institutional Area. The EDZs proposed are in the form of related economy clusters based upon the "economic" planning principle and planning imperative of "network efficiency". The economies of the 12 proposed new townships will also have a high dependency on Jaipur.

(B) Plan Implementation

Establish Guaranteed Land Title System in Rajasthan

Rajasthan is a front runner in this reform of national importance that is also one of the mandatory reforms under JNNURM that the state has agreed to. It has developed the model law, process map and technology map for putting in place a guaranteed land title system that is voluntary, with incentives, so that over time, it emerges as the singular system of land records as a preferred option by land holders, much like the demat system in the share market. This will require:

- A special Titling Authority (Metropolitan Land Title Authority) for the Metropolitan Area to be established, housed either in Stamps and Registration Department or in Urban Development Department.
- Transfer all revenue records to MLTA.
- Provide incentives to people to transact their conveyances via such a title system. These recommendations on moving land management and

registration closer to local governments are consistent with the recommendations of the 2nd Administrative Reforms Committee (ARC report, section 3.3.17)

Slum Upgradation Policy

The data provided by the Rajasthan Housing Board on the existing slums in Jaipur, indicate need for relieving congestion, upgrading the physical aspects of the slums such as roads, drains, sewerage lines, toilets, baths, kitchens. Access to water, power, health care and education is also poor. Hence up-gradation is undoubtedly needed. The policy will need to clarify the decision making involved in relocation, rehabilitation and up-gradation based on capital costs, labour, impediments and upgradation, clarification of ownership etc.

Affordable Housing Policy

While the market functions without any prodding on the higher income housing demands, the affordable housing requires entitlements for encouraging home ownership and subsidies in order to encourage market participation. The intent of the government policy should be to encourage market innovation in housing technologies and efficiencies of scale, provide entitlements for incentivizing home ownership, and construction quality. The three types of entitlements are : capital subsidies, interest subsidies and risk mitigation subsidies. Each has its advantages and short-falls that must be examined and adequately addressed in the final policy.

Discourage Speculative Land Holding, Land Market Value Distortions

Create incentives and dis-incentives for holding infill sites and developed land without use. Artificial shortage of land has created a significant distortion in land prices in and around Jaipur, while a large number of homes and developed land lies vacant. This has resulted in developers going after cheaper Greenfield land, selling it and then leaving the JDA with the task of regularizing these developments and to provide the necessary civic infrastructure.

Use of existing Government owned Land Banks to provide Affordable Housing

While there is limited supply of land left with the state departments in Jaipur,

it is recommended that public land banks in Jaipur and the 12 PSCs be first examined for the needs of affordable housing and civic amenities.

The master plan draft must be reviewed by all relevant state and local governments and their departments, and the notified master plan must become a guiding document whose project priorities are adhered to by all concerned. Priorities can be revisited collectively on an annual basis to accommodate changing circumstances. This will integrate efforts while reducing left arm right arm confusion.

Strengthen the Unified Metropolitan Transport Authority

Jaipur already has established a Unified Metropolitan Transport Authority(UMTA). However, the UMTA now needs to be given adequate authority. It can play two roles:

- as the technical agency that can help all planning bodies in the Metropolitan Area prepare integrated transport plans across all three tiers of government for the Metropolitan Area.
- as a regulator on two counts- first, of the transportation plan that have been approved in the Metropolitan Development Plan, and second, as the first level of conflict resolution for the MA, between agencies involved in transportation matters.

Effective use of the Spatial Data Centre

The Government of Rajasthan has set up a visionary Urban Spatial Data Centre (RSDC) recently which is a unique initiative in the country. Creating a Spatial Data Centre under Rajasthan Urban Information System (RUIS), RSDC provides, reliable and current spatial data which is a key requirement in the process of decision making both for preparing master plans and for urban management. On the latter, the value of GIS spans land management, municipal tax charges, monitoring services of such as water supply, roads, waste management etc. Government of Rajasthan has the opportunity to provide one of the best spatial and GIS support system for its major cities, with Jaipur being amongst the first to benefit with the use of spatial data for the creation of the master plans 2025.

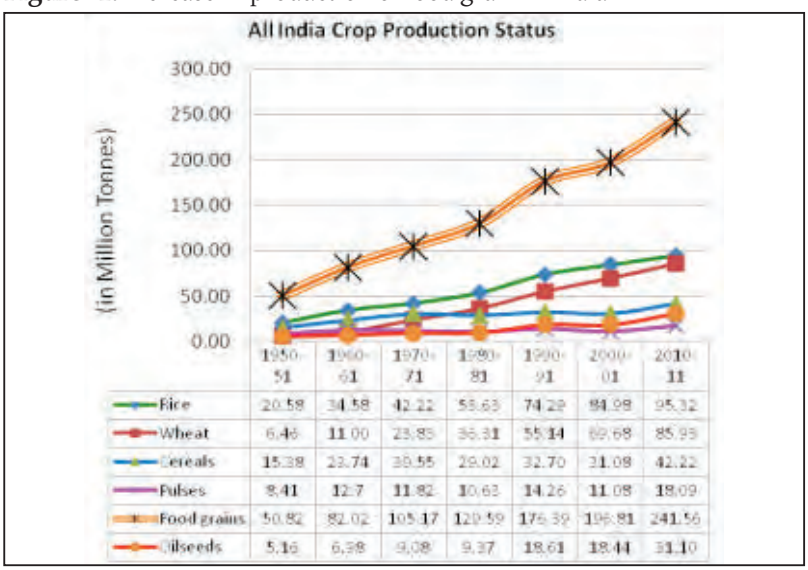
If such policy reforms are implemented in right spirit then the proposed Jaipur Master Plan 2025 will go a long way for correction of urban ills and Jaipur can again boast as a well planned city for which once it was famous for.

Sustaining Growth Of Indian Agriculture: Need For Policy And Structural Reforms

Atanu Purkayastha*

Growth of India's economy is greatly shaped by the performance of agriculture sector as this sector directly or indirectly is the source of living for 65% of its population and is also the source for raw materials for functioning of other sectors of the economy. A healthy and sustainable growth of agriculture sector is therefore, pre-requisite for achieving the desired growth of the overall economy of the country. Over the years, a lot of effort has gone in improving performance of this sector in enabling to meet the demands of the growing economy, particularly in respect of food grain production. Surely, Indian agriculture has made good strides and food grain production has increased from 50.82 MT in 1950-51 to 241-56 MT in 2010-11, as depicted in figure-1.

Figure -1: Increase in production of food grain in India



	1950-51	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11
Rice	20.58	34.58	42.22	53.63	74.29	84.98	95.32
Wheat	6.46	11.00	23.85	36.31	55.14	69.68	85.93
Cereals	15.38	23.74	30.55	29.02	32.70	31.08	42.22
Pulses	8.41	12.7	11.82	10.63	14.26	11.08	18.09
Food grains	50.82	82.02	105.17	120.59	176.39	196.81	241.56
Oilseeds	5.16	6.98	9.08	9.37	18.61	18.44	31.10

Data Source: Agricultural Statistics at a Glance-1011

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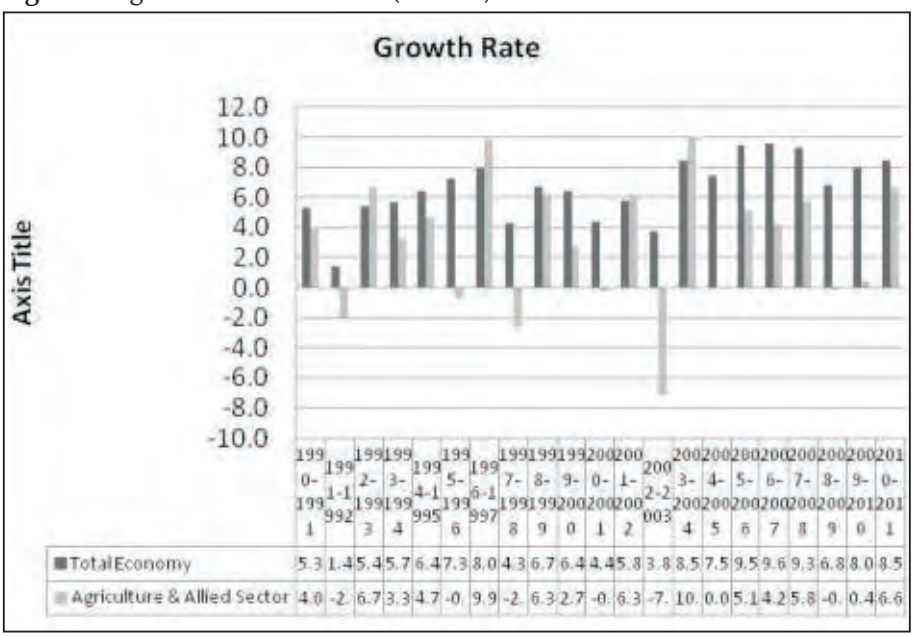
Though agriculture production has increased, the growth of agriculture sector has not been all that smooth and free of concerns. Return from agriculture has not been as remunerative compared to non-agricultural sectors resulting in widening of gap between urban and rural income and farmers loosing interest in agriculture. Often agricultural production wavered with serious ramifications on overall economy of the country; price fluctuations, spiraling inflation, etc., resulting in short circuiting of the planned developmental efforts. With around 40% irrigation potential, performance of agricultural sector has often been subjected to vagaries of nature, like in 2002-03 and 2009-10 when country suffered wide scale drought and registered growth rate of -7.2% and 0.4%. During 11th Plan period agricultural growth was aimed at 4% per annum, however, average growth rate achieved for the first four years is around 3.2% per annum. Since 1990-91, agricultural growth rate has been negative in six years and between 0 to 2% in two years, as shown in Figure-2 indicating unsustainable performance of agricultural sector vis- a-vis the target.

Figure-2: Agricultural Growth rate (1990-91)



Source: Directorate of Economics and Statistics, DAC

Though it is no more 'ship to mouth' situation, Indian agriculture is still saddled with the burden of meeting requirements of food security on year to

year basis. The impact of Green Revolution has almost stagnated and at times is showing declining trend. The situation is further compounded by increase in population, shrinking of natural resources like soil and water, challenges posed by climatic changes and increasing diversified demand from the industries and consumers. With only 2.3% share of the global land and 4.2% share of the global water, India has to meet food requirements of 16.8% share of the global population. The challenge is enormous and can only be met if agriculture growth is sustainable at the desired growth rate. Development of agriculture sector is the backbone of India's overall development strategy and is an important component for inclusive growth. A robust agricultural growth, which is sustainable, is pre-requisite for country's tryst with development. 12th Plan aims at 9 to 9.5% growth rates. To achieve this target, agriculture sector has to register a growth of 4 to 4.2% per annum. Going by the past experience, this is not an easy task and calls for redefining the priorities and reforming the existing policies and programme to confront the issues affecting the performance of the agricultural sector like, fragmentation of agricultural holdings, conversion of agriculture land to non-agriculture, productivity gap, technology fatigue, inefficient agricultural extension service, low irrigation coverage, poor credit coverage, weak agri-business infrastructure, etc., so that agricultural production increases and at the desired pace for the benefit of the whole economy. These issues are discussed at length in the subsequent paras.

Agriculture – a 'State' subject

Under the Constitution, agriculture is classified as a 'State' subject and therefore, responsibility for agricultural production in the country lies with the State Governments. Performance of agriculture is directly linked with the issue of Food Security, which greatly influences the security and integrity of a country. Under federal system of government, as in India, role of the Central Government is equally, if not more, crucial in assuring food security of the country. The Government of India (GoI) has been supplementing financially and technologically the efforts of the State Governments in increasing agricultural production to meet the requirements of food security of the country. In fact the State Governments look to GoI with regard to every major decision impacting the agricultural sector, be it export, MSP, fertiliser availability, fertiliser subsidy, etc. The system as it prevails in the country

now, policies and programme pertaining to agricultural sector flow from the Center to the States. Though GoI plays a major role in chalking the course of agriculture sector in the country, it is ultimately left to the actions of the states to achieve the desired result. To enable the Central Government play a decisive guiding role in determining the outcome of the agricultural sector and in maintaining food security of the country there is need to put agriculture in the list of 'Concurrent' subjects in the Constitution. In doing so, the domain or the role of the State Governments will not be reduced or compromised, however, will enable the Union Government to play its required crucial role, on which greatly rests the food security and therefore, the integrity of the nation.

Productivity Gap

The most important challenge that confronts agriculture in India is the productivity gap. A wide gap exists between the yield achieved in India and the highest/ potential yield achieved in the world, as detailed in Table-1.

Table-1: Productivity of major crops in India vis-a-vis countries having highest productivity during the year 2009

Crop	Country	Rank	Productivity (Kg/Ha)
Paddy	Egypt	1	10,000
	Australia	2	9,000
	USA	3	7,941
	India	62	2,977
Wheat	Belgium	1	9,353
	Netherlands	2	9,291
	Ireland	3	8,122
	India	52	2,841
Pulses	Bahrain	1	19,273
	Ireland	2	4,920
	Belgium	3	4,359
	France	4	4,215
	India	131	673
Oil crops Primary	Malaysia	1	4,684
	Libyan Arab Jamahiriya	2	4,346
	Costa Rica	3	3,652
	Colombia	4	3,604
	India	150	257
Sugarcane	Peru	1	1,31,812
	Egypt	2	1,21,429
	Senegal	3	1,16,111
	India	44	64,779

Data Source: Food & Agriculture Organisation (FAO)

What is more confounding is the wide gap in productivity of crops between the different regions of the country, with comparatively lower productivity in the areas otherwise rich in resources. With decline in availability of arable land and increase in population, higher production can only be possible by bridging the existing yield gaps through development of new production technologies and addressing the heterogeneity of production environment. To realize higher production, farmer depends more on aggressive management of farming practices than on the genetic potential of seed material. Consequently, farmers end up consuming more inputs like fertilizer, pesticides, irrigation, etc., than what is recommended and puts farming in collision with the micro-agricultural environment posing threat to the sustainability of agricultural operations. A study to examine the Total Factor Productive (TFP) growth of major crops in India between 1971-72 to 1999-00 period revealed that the technological gains of early years of green revolution have exhausted, agriculture has been experiencing diminishing returns to use of inputs and a significant proportion of the gross cropped area is facing stagnation or negative growth in TFP. The growth in output is more because of the increased use of inputs rather than the technology factor raising concerns on sustainability issue. The productivity gap that exists is an indicator of the yield potential that is achievable through technological enhancement and has to be achieved to lend sustainability to the agriculture sector in India. The required growth in yield to meet the targeted demand have to be achieved from research efforts by developing location-specific and low input-use and low cost technologies with emphasis on the region/sub-regions/districts where the current yields are below the potential/national average yield.

Planning Agricultural Interventions

Agricultural interventions are made from time to time both by the State and the Central governments to address specific concerns. While formulating the interventions, desired outcome needs to be realistically identified vis-a- vis the ground realities. The top-down planning approach have to be replaced by bottom –up approach if interventions are to be relevant vis-a-vis the ground realities and full commitment expected from the states and grass root level agencies in implementing the interventions. Often this is not the case resulting in loosing sight of the objective(s) of the intervention and it

becomes difficult to assess how the intervention is impacting, whether the desired outcome is being achieved and if yes, at what pace. While planning agricultural interventions, there is need to concentrate in the areas having water. These are also the areas having fertile alluvial soil and supporting agro-climatic conditions for higher productivity, which would enhance the scope of success of the interventions. Interventions should focus on long term gains, in making farmers less dependent on government, in creation of infrastructures, which would make farmers enterprising to walk the extra mile for higher profit. Convergence in implementation of various developmental programmes that are launched by the government, be it the Central or the State, is absolutely essential to ensure that there is no duplication of efforts and the desired outcomes are complimentary to each other in lending sustainability to agricultural operations, like the efforts in enhancing bargaining power of rural poor through MGNREGS should not lead to shortage of agricultural labour during the peak agricultural season, work undertaken through MGNREGS should address increasing water retention capacities of water bodies to enhance irrigation coverage, roads constructed under PMGSRY should invariably connect village markets to facilitate quick movement of agricultural produce, etc.

Land use Planning and conversion of Agricultural Land

Land being a scarce non-renewal resource, its use has to be a planned activity keeping in mind the natural potential of land to support the proposed activity vis-a-vis the existing activities and or other activities that are possible. However, this is not the case and country is faced with Singur and Rudrapur like situations, where fertile agricultural land has been released for industrial purposes. Everyday across the country hundreds of acres of productive agricultural land is being converted into non-agricultural land. Over the past decade, there has been decline in net sown area by approximately 2 million hectares; one of the reasons for this is release of land from agricultural for non-agricultural purposes. Fertility of soil is nature's gift to mankind. It takes about 500 years to form 1 inch of soil and therefore, 3000 years of nature's activity go to form 6 inches of soil essential for any agricultural activity. Hence, fertile land should not only be used for agricultural purposes but also preserved for the posterity to enable the future generations to meet their food requirements. It is imperative that a 'National Land Use Policy' based on

rational assessment of parameters like agro-climatic conditions, land type, soil quality, ground water level, etc., is formulated for the whole country to enable use of land on merit. The policy should also define optimum land size for various developmental/industrial activities to check grabbing of land in the guise of such activities. Simultaneously, a Central Land Conversion Act may be enacted laying down the grounds for conversion of agricultural land to non-agriculture to check populist decisions on land conversion. Agricultural land with Cropping Intensity (CI) of more than 150% should be conserved only for agricultural activity. Land of CI 100-150% may selectively be released for non-agricultural purposes, however, equal amount of less productive land may be made suitable for agriculture by creation of irrigation and other infrastructural supports conducive for agriculture. Also, policy for vertical expansion in case of housing and other urban infrastructures needs to be adopted. Consultation/clearance from the Department of Agriculture may be made mandatory in case of conversion of agricultural land for non-agricultural purposes. Preventing conversion of fertile agricultural land will also spare precious resources, which are otherwise used in making poor quality land suitable for agriculture. Such resources can be used in addressing other issues pertaining to sustainability of Indian agriculture like creation of R&D facilities, enhancing water use efficiency, strengthening extension machinery, creation of markets, etc.

Soil Fertility Mapping and Rationing use of Fertilizer

Use of fertilizer is a major concern as its use has been less a measure of deficiency in soil fertility than one's capacity to afford. Majority of farmers are not in a position to provide even optimum dose of fertilizer for want of availability coupled with their poor financial capacity whereas there are umpteen examples of excess and unbalanced use of fertilizer leading to degradation of fertile irrigated land, as seen in Punjab, Haryana and Rajasthan. Chemical fertilizers are highly subsidized in India. Huge stakes are involved in use of fertilizer, as on one side fertilizer subsidy is draining the national exchequer of precious revenue and on the other side injudicious use of fertilizer is making fertile land unproductive! Fertilizer subsidy has grown exponentially during the last three decades from Rs.60 crores in 1976-77 to an astronomical Rs. 61,264 crores in 2009-10 and is likely to exceed the budgeted subsidy of Rs.58,000 crores in 2010-11. Reforms in use of fertilizer cannot be

timelier. Soil fertility does not change on year to year basis. Hence, the prevailing practice of periodical soil testing is of no significance. Instead, a National Soil Fertility Map may be prepared after systematic assessment of soil fertility every ten years. Based on such soil fertility map and the type of crop being cultivated, fertilizer rationing may be introduced in the country. This will ensure balanced use of fertilizer, use of fertilizer as per need, increase availability and check pilferages, degradation of soil and stop draining of resources as subsidy.

Fragmentation of Holdings

Agricultural Census 2005-06 reveals 7.75% increase in number of agricultural holdings compared to 2000-01 with reduction in average size of operational holdings to 1.23 ha. in 2005-06 compared to 1.33 ha in 2000-01. Small and Marginal holdings (<2.00 ha) together constitute 83.29% of 129.2 million operational holding in the country. In terms of operated area, this corresponds to 41.14% in 2005-06 as compared to 38.86% in 2000-01 revealing further fragmentation of already much fragmented agricultural holdings in India. The implication is that over 40% of the agricultural holdings in India are subsistence holdings with low capacity to invest and therefore, low in productivity. Fragmentation possess the most important challenge to the issue of sustainability of agriculture growth in the country as it makes it difficult to achieve economy of scale in agricultural operations on smaller holdings. There is need to make these small and marginal holdings part of the larger production system to lend sustainability to their existence. All unviable holdings may be merged into land bank, which may be converted into "Agriculture factory" for higher productivity through adoption of improved production technologies, creation of assured irrigation, mechanization, setting up of processing units for value addition and are managed professionally. Such Agriculture factory may employ the owners of the merged holdings as employees with appropriate training for capacity enhancement to negate displacement of labour. This will also prevent random conversion of productive agricultural land to non-agriculture land as many farmers unable to sustain agricultural activity sell off their non-viable holdings. An effort accordingly can be made on a pilot scale in the regions, where challenge to agricultural productivity is more due to fragmentation of holdings, like in Indo-Gangetic plains.

Crop Plan

Though farmers are free to choose the crop they want to grow, guiding them particularly the small & marginal ones, in deciding what to cultivate would certainly help in improving their income. Choice of crop should depend on systematic assessment of factors like, agro-climatic conditions, soil type, availability of water, productivity of other crops being grown, demand–supply, market price, post harvest facilities, etc. However no such practice exists and farmers grow what they have been growing conventionally.

A 'Crop Plan' based on systematic assessment of the aforesaid factors needs to be prepared for every district to guide the farmers in deciding what crops to be grow and should form the platform for all agricultural interventions. A Crop Plan will provide a rational platform for assessing agriculture potential at the micro level for optimum detailing of resources thereby creating a rational demand on inputs. This will enable judicious deployment of resources across the country. Crop Plans may be reviewed periodically keeping in mind market conditions and food security requirements. It is well known that legume crops, green manuring, etc., help in restoration of soil fertility and therefore should be encouraged in a proactive manner by integrating those with the Crop Plan.

Water Management

From agricultural point of view, India receives relatively good and well distributed rain. Yet the cropping intensity of the country is around 134% indicating vast proportion of agricultural land as mono cropped, essentially due to lack of irrigation facilities. Irrigation is a critical input in enhancing higher productivity, more so at the critical stages of crop growth and therefore calls for bringing more area under irrigation. Increasing irrigation coverage necessitates efficiency and increase in use of water in agriculture through creation/restoration of structures to increase storage, reduce runoff losses, minimize leakages and regulate use of water. India has about a million water bodies, water retention capacity of which has severely reduced due to siltation and mismanagement. These water bodies need to be reclaimed/de-silted to store rainwater otherwise lost as runoff and used inter alia, for irrigation. Reclamation and management of water bodies may be done either by earmarking fund under the ongoing MGNREG Scheme or through a

separate ACA scheme and implemented on mission mode through formation of 'Water Users Group' (WUG). Formation of WUGs must be entrusted to the Department of Agriculture in the States so that objective of increasing agricultural production in the areas adjoining the water bodies remains a priority. Further, the feeder irrigation canals/ channels have mostly broken down resulting in seepage losses. In many instances the last mile irrigation connectivity was not even completed! A one-time intervention has become essential for repair/ reconstruction/ relaying of all derelict irrigation channels to enhance efficiency and coverage of irrigation. This would go a long way in ensuring sustainability of agricultural sector in the country.

Seeds

Seeds being the store house of genetic potential, are the crucial inputs in determining productivity. One of the major factors for low productivity is inadequate supply and high cost of quality seeds, poor Seed Replacement Ratio (SRR) and poor Variety Replacement Ratio (VRR) for majority of the crops grown in the country. Cultivation of field crops is greatly dependent on farm saved seeds, particularly among the large section of small, marginal and even medium farmers. Cost being an important factor, use of hybrid seed remains out of domain of a large section of farmers, where as use of hybrid seed is *sine qua non* for achieving higher yield. The situation is further accentuated by the fact that hybrid seeds are required to be replaced every year. A concerted effort has to be made to increase production of quality seed at affordable price and popularisation of use of hybrids among the farmers in a mission mode approach to achieve the desired SRR and VRR. Private sector has now made big strides in seed production. Government subsidy is not available for private sector seeds, which acts as a major barrier in their wide scale adoption by the farmers. Policy needs to be formulated to include private sector seeds under subsidy programme.

Agricultural R&D

India can boast of having one of the world's largest agricultural research infrastructures with dedicated research centers for most of the crops. However, not much can be said on quality of research work being done. India's investment in agricultural R&D is 0.46% of GDP compared to 1.5% in developing countries as a whole and about 3% in developed countries like USA. There is

need to increase investment in agricultural R&D by 2 to 3 times as sustainable growth in agriculture will come only through adoption of new technology.

Infusion of cutting edge technologies in agriculture has been minimal. The policy environment in adoption of new technology, particularly with regard to agricultural bio-technology in the country is utterly confusing! We are embroiled in the controversy of GM technology without realizing that even Green Revolution was made possible through genetic modification of crops. The much sought after breakthrough in agricultural productivity will come only through genetic modification and hence GM research must take centre stage in agricultural research in the country, be it for increasing productivity, pest control, adaptation to climatic change etc. GM research has to be carried forward and faster to achieve desirable results. Issues pertaining to climate change have to be prioritised as this is the most significant natural factor going to challenge food production and therefore, the very existence of mankind in the coming years. There is urgent need to develop climate resilient varieties, which can withstand extreme agro-climatic conditions like, flood, drought, cold wave, frost, etc., and do not affect food grain production. Agricultural R&D should focus more on precision farming methods to maximise resource utilisation. Despite release of a large number of varieties every year by the public sector R&D Organisations, their acceptability among the farmers is very low. Also production of public sector certified seeds is much less than the demand. It is essential to have a re-look into the whole process of variety development, its popularization and seed production in the country so that quality seed is easily available to the farmers for increasing productivity and sustaining agricultural growth. There is need for allowing competitive lateral entry in R&D hierarchy to infuse competition and stop inbreeding. Scientists working in public sector R&D Organisations may be allowed royalty to motivate them for quality research work. Effort has to be made to create a large pool of qualified technical hands in the country capable of handling the new challenges of agricultural R&D. Young and bright students have to be motivated for studying/working in the fields of agricultural sciences, bio-technology, microbiology etc. Just creating research centres and labs will not suffice the cause of quality R&D in agriculture; we need to have quality people working in these centres to deliver the result. There is need to constitute State

Agricultural Research Council to dovetail research activities of SAUs with the requirements/problems being faced by the State Department of Agriculture in augmenting production.

Extension Service

Failure of extension service is a major issue confronting sustainability issues in agriculture sector, more so in reference to small and marginal farmers who dominate the agricultural scenario. Adoption of new technology is the only answer to the issues of sustainability and therefore strengthening extension service is a must. This calls for structural reforms in the existing extension service network across the country. A centrally sponsored Extension Service Revival Scheme may be introduced, through which dedicated agricultural service/ advice may be provided to every farmer by qualified extension workers, like Accredited Social Health Activists (ASHA) and Ancillary Nursing and Midwife (ANM) workers under the health set up in the country. The cost of such intervention may be shared by the GoI so that financial burden on the states is minimised while GoI keeps the initiative in accounting performance of such extension infrastructure.

Another concern in this context is shrinking in recruitment of personals qualified in agriculture at the grass root level. Earlier High School/ Intermediate (+2) in Agricultural Sciences were recruited as extension workers. Now, education at these levels in agricultural sciences has become almost extinct as there are not many takers of such courses. There is need to revive the system of teaching agricultural sciences at High School and Intermediate levels particularly in the rural areas in the interest of reviving extension service in the country.

Restructuring Agricultural Administration

Agricultural administration in the country needs to be revamped to reinforce objectivity in their functioning. Agricultural service has become more laid back and office oriented than field oriented. Consequently, interaction between the farmers and the agricultural officials has become much superficial. Agricultural officers need to tour more often and stay at the blocks to provide 24×7 service to the farmers at their door steps. Adaptive research should be made mandatory for every district and the positive outcome incorporated in the district crop plan. Functioning of KVKs and SAUs should be in synergy with the Department of Agriculture than in silos.

Agri-Business Activities

Increasing productivity alone will not lend sustainability to Indian agriculture unless substantial changes are made in the existing management of agri-business in the country. Agriculture has to be an organised farmer-centric business activity with profit as the sole motive to drive growth in the sector. Currently more than fifty per cent of the villages are still not connected by roads. Scientific storage capacity is far short of required capacity and cold storage facility is only for 10% of fruits and vegetables produced. Almost forty percent of the villages have no telephone connections. Only 7% of the total quantity sold by farmers is graded before sale. Due to lack of proper cleaning, grading and packing facilities at the village level, about 7 per cent of food grains, 30% of fruits and vegetables and 10 per cent of spices are lost before reaching the market. The main player in marketing of agricultural produce is the middleman, whose brunt is faced more by the small and marginal farmers. Except some states like Punjab, Haryana, Uttar Pradesh, etc., there is no organized marketing of agricultural produces in the country. For more than 80% of the farmers, marketable surplus is small and do not provide incentive to search markets for higher price for their produce. Most of the farmers sell their produce to the middleman at a much lower price than the market price. Organizing 'Farmers Groups' (FGs) to aggregate their produce at farm gates and reaching the aggregate to right market for remunerative price will drive profitability in agriculture. Agri-business Centre have to be created at the village level, which would act as hub for all agri-related developmental/commercial activities, viz., training of farmers, selling of inputs, collection, sorting, grading and packaging of produce and final delivery to bigger/consumers' markets. These Agri-business Centres may be strengthened through creation of godowns, linkages with bigger market, financial and technical support and should be managed by FGs. The idea is to create infrastructures, which would make even small marketable surplus profitable for the farmers.

To sustain income from agriculture many farmers directly or indirectly, take lease of agricultural holdings from other farmers. Such leasing of land is contract farming and is gaining ground. We have to accept this reality and formulate policies to protect the interest of the contracting parties in the overall interest of the agriculture sector. Post harvest losses are high in case

of perishable agricultural produce and more investment has to be made in creation of warehouses and cold chain, in linking of markets through dedicated corridors so that perishable agricultural produce reaches faster from producer to consumer and certainly without the chain of middleman. We have to move from local markets to countrywide single unified market by abolishing APMC and other Acts, which works as a barrier for private initiatives. Many states are still not in favour of amending APMC Act to remove the artificial barriers. Amending of APMC act should be made a precondition for availing GoI support for development of market infrastructure.

Indian farmers are grossly uneducated on market behaviour. Dissemination of market information to the farmers is almost nil. All marketing yards/*mandis*/Agri-business Centres should be electronically connected so that market information is readily available to the farmers and in vernaculars so that farmers can readily access market information across the country and take appropriate decision on marketing of their produce.

Export and Trade

Another issue that is troubling sustainability in agricultural sector is the country's agricultural export policy. The present policy of allowing export as knee jerk reaction is affecting country's credibility in the international market. In fact, India needs to play a more significant and stable role in international agricultural trade by being a major exporter of agri-products. Agricultural production estimates needs to be assessed more realistically to enable agri-export decisions are taken well before the harvest hits the market. A stable and matured long term agricultural export policy will help the farmers in formulating their production strategy and will also incentivise them for higher production. This would also make them less dependent on MSP, which means lesser burden on national exchequer. Backward integration of farmers with WTO regimes on agricultural trade is essential to enable them to select appropriate crop and in adoption of package of practices, sanitary and phyto-sanitary measures to make their produce more suitable for export market and in fetching higher return. Freight issues may be favourably considered for promoting trade. Further, Government's role in procurement through FCI should be reduced and private sector participation

encouraged in bringing competition in procurement and in prices. A stable export policy would also encourage private sector to go for procurement.

Processing and Value Addition Infrastructure

With increase in income and number of working couples, demand for processed and value added food material is on the rise. Agriculture is gradually shifting from supply to demand driven, more and more farmers are switching from conventional agriculture to high value agriculture including horticulture and animal husbandry. Facilities to create value addition to primary agricultural produce have to be taken to the villages at Farmers' Group level so that farmer's family can participate in the process of value addition and earn additional remuneration. Setting up of agri-processing units should be encouraged at the source of raw materials and facilitate backward integration with the farmers in reducing transportation cost and perishable losses. As a policy, recruitment to these processing units should be localized to enable transfer of labour from agriculture sector. The pace of processing and value addition should be accelerated as its expansion has catalytic affect on other sectors like transportation, refrigeration, power, which is beneficial for the overall economy.

Policy of Subsidy

Subsidy is normally used as a bait to attract farmers to new technology and can be justified to some extent at the initial stages of introduction of the technology; however, its continuous use has serious pitfalls. It makes farmers, particularly the small and marginal ones, incapable of walking the extra mile. A technology, say, quality seed or quality inputs or machinery, has to survive on the strength of its merit and not because of some accompanying freebies. Also, in the long run, subsidy becomes the potent source of misuse and corruption. Subsidy as a policy should be reduced to a bare minimum, for a very limited period and only at the introductory stage of the technology. Times to time agricultural loans are written off on the pretext of reducing the burden of the farmer. These populist measures do not have any long term implications for the farmers and public money is just wasted on instant brownie points. Instead of subsidy and writing off loans in the false pretext of reducing the burden of farmers, government should concentrate in creation of infrastructures propelling growth and facilitate profit in agricultural operations, which alone would reduce burden of farmers.

Agricultural Credit

Agriculture credit is a vital input in agricultural operation. Agriculture credit flow has increased from Rs. 2,85,146 crores during IXth Plan and is likely to cross the target of Rs. 4,75,000 crores set for the last year of XIth Plan. Though demand for agriculture credit is increasing, credit coverage by organized financial institutions is only to the extent of 40-45% of the total farmers in the country. Private moneylenders still play a major role in financing agricultural operations and at a much higher rate of interest. Further, the share of small and marginal farmers in organized credit is relatively much less, rendering increase in credit flow meaningless for the vulnerable and most needy segment of the farming community. There is also huge regional imbalance in credit coverage. These anomalies have to be addressed to make agricultural credit meaningful in enhancing sustainability of Indian agriculture. A time bound action plan needs to be adopted to cover all the farmers/ rural entrepreneurs with *Kisan* Credit Card (KCC) to reduce the role of middleman in agriculture.

Private Sector Role in Agriculture

Private sector is evincing great interest in agriculture sector, which is good and needs to be encouraged. Sub-sectors, which require high investment and efficiency in operation like, irrigation, agri-R&D, procurement of agricultural produce, creation of market linkages, cold chain maintenance, etc, may be entrusted to the private sectors. However, government may maintain a strong regulatory role to ensure proper checks and balances, ensure quality technology reaches farmers' fields and farmers' interest is protected.

Conclusion

Development of agriculture sector holds key to India's future development and place in the community of nations. The rich and varied agro-climatic conditions of the country provides the opportunity, which needs to be exploited through adoption of appropriate market driven policies and reforms to achieve sustainable growth in agriculture sector. The significant chunk of the small and marginal farmers has to be made part of the greater agricultural production system to bring economy of scale in their operation. Agriculture productivity has to be more a function of technology adoption than input management with adequate support through market

interventions. Agriculture has to be an organised business activity managed by the farmers for profit maximization so that they are motivated to go for higher production and drive the economy for the development of the country and its people.

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Gender And Family: A Reorientation Of Their Use In Policy Making On Health And Health Education In India

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Abstract

The concept of gender in policy research is of recent origin. Nature's differences in construction of gender established a differential pattern of behavior. This was further reinforced by social evolution of institutions over time. Sex as initial representation of gender was used to facilitate creation of organizing principles for understanding such human behavior. Our understanding of such differences in behavior has been overshadowed in policy by a more stark reality of power differential and resultant inequalities in economic and social outcomes. It is a known reality that women face constraints in access to education, health, economic and political, cultural and social opportunities. Discussions are galore, yet policy initiatives are rare and few. Gender invariably gets subsumed in discussions on inequalities under economic and political aspects of inequalities. The resultant rise of feminism and strident demand for voice and representation has not significantly altered these inequalities. Yet the genders converge in the institution of family. The family can be viewed as a cooperative mechanism for sharing of critical decision making affecting it. This simple but important fact should become the basis for policy decision making, especially in fields of health. This would ensure more purposed and equal use of interventions. Its resultant economic and social impact would only facilitate greater economic contributions from families in a population by their impact on decisions of fertility, child and maternal health, education and economic activity. This paper uses secondary data from rural health care programmes in India to substantiate these arguments and provides a more collaborative agenda for women development.

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Key words

Health seeking behavior, Gender, health education, health indices.

Introduction

Gender, as a category emphasizing differences in behavior, is of recent origin. The debates as to why such differences are observed revolve around the issue of nature or nurture. While some differences in behavior are due to natural or biological differences—termed as sex—many behavior are socially constructed. For eg , the female sex by nature is destined to fulfill the role of procreation and hence maternal health is very specific to female gender. However, avoidance of fertility and seeking no more children behaviors are socially and culturally constructed and hence are of the nurtured variety. More significant is the fact that, females, as a category, show significant health differentials, compared to male sex, in education, economic and social status and more significantly in health. The health differential is most crucial as health is considered as an essential input for both economic and social upliftment. For eg in India, girl children are more likely to miss their immunization schedules, more likely to have poorer nutritional status, have higher rates of mortality till child bearing ages. While these facts are accepted in policy making, yet the use of the central concepts of family and gender have been used as mutually exclusive and in a competitive and combative manner, instead of a collaborative manner. This has had a deleterious effect on utilization of healthcare interventions in India, especially in the female sex and is the root cause of inequalities witnessed for women in the social sector programmes, especially health. This paper looks at the root cause of such inequalities in the health sector and suggests a frame work for amelioration of such inequalities. The paper is structured as follows. After a brief introduction to the problem, it looks at the extant literature on gender to position the problem in its correct perspective. It then, using examples and data from health acre studies in India, substantiates the main arguments of the paper. Based on the inferences drawn from the analysis of data, it suggests a conceptual framework for a collaborative agenda between the concepts of family and gender as a solution to the existing inequalities.

Literature Review

The concept of gender is a recent development in the study of people. It is a

fact that there are differing patterns of behavior and social organization based on gender. This pattern varies between societies, classes, generations, races or religious groups. A Label of sex or gender has been used to categorize or organize these behavioral differences (Bechy 2006). Two streams of explanations have been proposed for these differences in behavior related to social power, status and organization based on gender. They are represented as a debate between Nature versus nurture. These explanations have been colored by political stand points where groups seeking male dominance have supported the role of nature while feminists seeking change have focused on role of social institutions and factors (Francis and Skelton 2005). It is a known reality that women face constraints in access to education, health, economic and political, cultural and social opportunities. Feminists would like us to believe that majority of societies elevate men and activities associated with men over women (Delphy and Leonard 1992). Over the years, efforts to address these inequalities have taken two routes. First, an effort to include women in development by addressing their practical day to day needs—called Women in development (WID) and the other, an effort to challenge the deeply entrenched discrimination against women at a strategic level –called Gender and development (GAD) (Kabeer 1994, Unterhalter 2005). WID stressed on need and generated many "what works" messages facilitating their emphasis on bringing women into development (King and Hall 1993). They also stressed on the need to capture data separately for women and girls to understand the degree of bias in societal actions and further look at impact of policies. GAD started as a critique of WID in 1980's and looked at inequality as an issue. Thus GAD converted the movement from action oriented development to a political movement concentrating on achieving power status and hence the need to compete. GAD stressed bringing women into development, could not develop the simple messages "That work", but tried to influence policy at two levels. One was to critique the policy involving gendered process of decision making. The aim was to push for gender as a fundamental value of equality and so mainstream gender and facilitate presence of women as decision makers (UNDP 2002). The other way was to seek to identify how a budget is spent and what components of it actually yields specific benefits to women and girls (Derbyshire 1998). Very little empirical work has been done on gender mainstreaming and budgeting

(Bechy 2006). The concept of gender has always been contested from a point of view of explanation for differences in pattern of behavior based on gender and also for the interpretation of the concept of gender itself (Bechy 2006).

The Debate on Sex/Gender as a Concept

The very use of the term "Sex" as a variable and distinct from the term "Gender" was done by feminists of 1960's and 1970's.This was to distinguish between gendered differences as given by nature—hence labeled as Sex, and as socially learnt—hence labeled as gender (Oakley 1972) which represented a social constructionist approach. Feminist researchers have maintained that there is no real sex or gender and the notion of sex/gender is perpetuated by the various acts of gendered behavior (Butler 1990). This debate and distinction is a product of the second wave feminism and is fundamental to the debates propagated in recent times (Harrison 2006). While sex was accepted as a label to categorize humans based on obvious biological givens, gender was propagated to be a larger and more changeable concept which explained a social propagation of differences in gendered behavior. Gender, to feminists, was to represent the essentialist perspective—a concept representing domination of male sex over female with resultant oppression and biases, which was common across race, class and nationalities. Yet, there is an interaction and overlap of the complex biological and sociological constructions which influence gendered behavior (Harrison 2006).

The Debate on differences in Behavioral Patterns

The debates on differing patterns of gendered behavior have evolved around roles of women in work place and Family and care. The concept of domesticity – the care of people in house hold was traditionally apportioned as women's work. In the concept of family, work was categorized into domestic and market oriented. Men were apportioned market oriented work while women were given domestic work. Feminists have stated this as the reason for presence of unequal property rights and allocation of work (Crompton 2006).

Gender and Work

Technological advancements, developments in the areas of communication and finance have contributed to globalization of markets and cultures. This has forced the breakdown of the traditional allocation of market work to men

and domesticity to women (Beck 1992). Yet occupational segregation persists, which gets perpetuated by occupational breaks. One stream of explanation is that this is due to individual and family choices while another stream states it as an outcome of exclusionary practices and structural barriers (Crompton 2006). The neoclassical economic theories of family maintain that family distribution of work is most efficient while sociological theories argue that individual preferences determine women's employment patterns. The family distribution of work assumes that the family as a unit maximizes its utility, and hence the work allocation (Becker 1991). The need for occupational breaks due to caring duties is the rationale behind women not seeking paid work. Feminist critiques counter this view by stating that it is the constraints on choice regarding the type and amount of work performed in the family that propagate the family distribution of work. (Braunstein and Folbre 2001). A view of recent origin attributes the changing pattern of employment choices among women to increasing levels of individuation and choice and therefore women are expressing their choice (Catherine Hakim 2000). Different categories of women based on their preferences for home or job or a combination express choices which lead women's employment patterns. These grouping are peculiar to women and thus are the basis for differences in employment patterns between men and women.

Gender, Care and Welfare state

Feminists have always problematised care (Ungerson 2006). The first wave of feminists' emphasized women's right to participate in the political process of state and governance, and thereafter on the role of state in ensuring equality as a worker with respect to men. This equality was centered on the role of women as care takers of children in a family and how state should provide benefits to facilitate women to carry out the responsibilities of motherhood and pay earner (Chew 1982). Over time, as life expectancy increased, ageing of population resulted. This combined with the propagation of the concept of community care, enabled the debates on "Care" to be expanded to cover old people and the dependents at home including those with disabilities and infirmities (Hobson, Lewis and Sim 2002). What was missing from these debates propagated by feminists was the absence of recognition of the differences in work, family and care patterns across race, ethnic groups, social classes and age. The emphasis was on issue of "why all women were

providers of informal care" taking this as a normative guideline in an existing societal cultural milieu. What has been missed out is the fact that not only women, but men also act as informal care providers (Finch 1989; Ungerson 2006). These debates have had their impact on the incorporation of the concept of gender in sociological theory which should have acted as the intellectual bases for proponents of feminism.

Gender and Sociological Theory

A large body of literature exists in sociology which documents the analysis of gender relations and its attendant variations in patterns of gender differences and inequalities. Despite this, gender is not regarded as core to traditional sociological theory (Walby 2006). This was due to the emergence of gender much later and also a greater realization that there are other forms of social construction such as race, ethnicity etc. Thus gender tends to be considered in relation to these social constructions. Gender in sociology– is socially constructed, that gender is different from biological sex, it is changeable and there are variations in patterns of gender relations. Gender, was earlier considered as located in specific social institutions such as family, now it is considered as located in all social domains. This generalization of location of gender in social themes is driven by a the theoretical concept of " Differences" leading to debates as to how gender relations were differently constituted in different ethnic groups, or nationalities and how inequalities were addressed(Bhopal 1997). Feminist theory, concentrated on the importance of inequalities in gender relations, rather than differences across social constructions such as race, class etc. This was basically based on a view that the core features of gender relations were stable and have cross cultural stability and application. The emphasis of feminists was to focus upon oppression of women by men and overlooks the role of complex social processes. The issue is whether gender should be universalized in sociological theory in preference to acceptance of role of sociological processes in explaining differences in gender relations and behavior patterns (Ferree et al 2002)—an essentialist perspective versus a difference approach.

The Impact of the Debates

At a policy level, it is seen that people charged with making policy get easily influenced by "problems" as identified by the media, political groups and activist groups. Further there is a tendency to view the affected groups as

part of the problem. Since these policy makers require "Quick fixes " to problems, there is a tendency to use gender binary approaches as they are easily visible and can be easily shown to have impact on issues which are in vogue and are being debated (Bechy 2006).

Conceptualization of the Problem

The above literature review highlights some critical issues which have been impacting policy formulation and implementation related to gender.

- First it is a fact that the concept of gender has got embroiled in debates related to its focus on issues of importance. This has been aggravated by the strident attitude of vocal feminists and compliant policy makers, thereby shifting the focus from key and essential issues. This impact is maximum felt in the developing countries, like India where health and education is a more fundamental and developmental issue than representation.
- Inequalities in social and economic spheres exist in relation to access to opportunities based on gender. Discussions are galore, yet policy initiatives are rare and few. Gender invariably gets subsumed in discussions on inequalities under economic and political aspects of inequalities. Political standoffs have become the norm. Development and amelioration of inequalities has suffered.
- Empirical work on why inequalities exist, as grounded in facts in practice is a casualty in these debates.
- The debates have slowly shifted the focus form gender and its interactive perspective in relation to race, class, societal cultures and practices to an existential gender in a uniform, across the globe perspective, independent of its interaction with other social factors.

By looking at the context of policy related to health and education in India, We further look at how these crucial patterns of policy directions have affected the amelioration of inequalities, especially in relation to the crucial developmental fields of education and health.

The Impact of Politics of Gender and Strident Feminism

The rise of second wave of feminism is what resulted in a paradigm shift of looking at gender from a needs based, developmental and collaborative perspective to a radical combative, competitive, rights based and political

perspective. What is more distressing is the fact that this shift is being aggressively pursued in developing and less developed countries based on international institutions. The pursuit of nation level initiatives for addressing the global gender gap (Global gender gap 2011) is clearly one such case. Not only is the emphasis on economic and political participation emphasized, low importance is given to health. It is also being assumed that these are applicable across cultures of very diverse nature and prioritization of indices is uniform across cultures and ethnic groups. This has been the main criticism of strident feminism (Crompton 2006).

We take the example of India to understand the impact of existentialist domination of gender policy making has had in the field of health care and education.

A key impact of the competitive stance of gender to address issues of inequalities is seen in the way health care interventions are utilized Vis a Vis the awareness of existing of such and other alternate interventions. Here the decisions are either, on rebound, more controlled by the male or the Family asserts its right to decision, since it is a family decision based on the cultural norm.

- Take the example of birth order control. The percentage of Indian women continuing to have unwanted children after two child norm is high (See tables 1 and 2). While 70% of the women do not want children after the two child norm, at least 36% continue to have children. The percentage is high irrespective of level of female literacy and level of freedom of decision making to women in respect of their own health care (DOHCFEM table 1). The percentages increase with decreasing levels of literacy and decision making powers. Same is the case for preference for male child and therefore the need to cross the two child norm (See Table 3). What is clearly visible is the differential between stated empowerment of women in respect of own decision making in respect of their health (DOHCFEM) and the stated need in respect of two child norm (Want no more children WNMC). Here there is deliberate rebound dominance by the male. Unwanted pregnancies thus are contributing to increased risk and therefore maternal mortality and morbidity.

Table 1: Difference between felt need and actual power of decision making in women

DIFFERENCE BETWEEN ACTUAL DESIRE FOR NO MORE CHILDREN AND DECISION MAKING FREEDOM IN WOMEN								
	FEMALE NFHS2	LITERACY NFHS3	NODECFEM NFHS2	NFHS3	DOHCFEM NFHS2	NFHS3	WNMC NFHS2	NFHS3
Andhra Pradesh	36.2	55.6	7.4	24.3	61.4	61.8	83.7	72.9
Arunachal Pradesh	47.3	58.1	1.4	2.7	70	68.7	46.1	63.8
Assam	46.1	69.8	4.6	11.6	65.1	80	64.5	69
Bihar	23.4	37.9	13.5	27.2	47.6	53.4	41.8	60.2
Delhi	70.9	78.9	5.3	10.4	68.7	74.2	84.3	77
Gujarat	49.7	67.3	4.1	13.1	71.4	63.2	75.9	72.4
Goa	71.4	87.3	3.6	7.5	61.6	67.5	75.3	61.3
Himachal Pradesh	63.7	81.5	0.8	17.4	80.8	66.5	90.9	83.4
Haryana	44.8	62.4	3.4	13.2	67.2	71.7	81.1	76.4
INDIA	41.8	59.4	9.4	20.5	51.6	62.2	72.4	70.5
Karnataka	44.8	66.3	8.1	26.9	49.3	53.3	80.0	74.3
Kerala	87.4	96.1	7.2	10.8	72.6	75.3	85.6	69.3
Maharashtra	55.4	76.5	7.2	12.7	49.9	67.8	81.2	76
Madhya Pradesh	31.4	49.9	12.5	27.1	36.6	51.7	60.1	72.2
Mizoram	90	94.4	5.8	2.3	73.2	91.9	36.7	57.6
Orissa	40.5	59.7	10.6	17.1	38.6	64.7	69.3	70.5
Punjab	61.2	72	1	11.2	78.5	76.8	89.3	78.6
Rajasthan	24.5	38.9	13.3	31.4	40.6	51.9	58.3	67.2
Sikkim	50.6	73.7	2.7	5.5	60.2	79.5	90.2	81.3
Tamil Nadu	52.5	78.3	2.4	8.2	61.1	73.2	85.8	78
Uttar Pradesh	29.8	46.5	16.4	22	44.8	64.2	43.7	65.4
West Bengal	50	63.7	8	25.6	45.1	59.6	87.2	73.4

Table 2: Actual implementation of freedom to decide for desire of children in women

DIFFERENCE BETWEEN FREEDOM FOR DECISION MAKING AND ACTUAL IMPLEMENTATION IN WOMEN IN DESIRE FOR CHILDREN						
	DOHCFEM NFHS2	NFHS3	BO>2 NFHS2	BO>2 NFHS3	BO>2 DLHS2	BO>2 DLHS3
Andhra Pradesh	61.4	61.8	67.80	8.50	22.50	18.10
Arunachal Pradesh	70	68.7	73.40	27.80	48.75	35.00
Assam	65.1	80	74.80	17.10	40.62	35.70
Bihar	47.6	53.4	77.90	39.80	54.40	53.90
Delhi	68.7	74.2	70.90	8.40	42.20	30.50
Gujarat	71.4	63.2	72.10	14.30	38.14	33.40
Goa	61.6	67.5	70.70	17.50	20.01	17.90
Himachal Pradesh	80.8	66.5	69.10	3.70	24.42	22.00
Haryana	67.2	71.7	70.70	12.20	38.45	33.50
INDIA	51.6	62.2	74.20	16.80	42.00	37.40

DIFFERENCE BETWEEN FREEDOM FOR DECISION MAKING AND ACTUAL IMPLEMENTATION IN WOMEN IN DESIRE FOR CHILDREN						
	DOHCFEM NFHS2	NFHS3	BO>2 NFHS2	BO>2 NFHS3	BO>2 DLHS2	BO>2 DLHS3
Karnataka	49.3	53.3	69.70	11.60	29.63	31.50
Kerala	72.6	75.3	61.00	12.00	15.49	15.70
Maharashtra	49.9	67.8	72.10	12.00	32.36	26.80
Madhya Pradesh	36.6	51.7	77.80	18.10	49.37	32.80
Mizoram	73.2	91.9	75.00	57.00	41.52	32.10
Orissa	38.6	64.7	71.90	17.70	42.06	32.30
Punjab	78.5	76.8	71.40	8.80	32.42	24.50
Rajasthan	40.6	51.9	77.50	27.20	47.39	39.40
Sikkim	60.2	79.5	79.10	4.20	30.47	31.10
Tamil Nadu	61.1	73.2	66.00	5.40	21.57	17.20
Uttar Pradesh	44.8	64.2	79.70	35.80	56.91	54.70
West Bengal	45.1	59.6	71.00	10.60	30.97	28.00

Table 3: Sex preference bias for children in familiesDLHS3 2007

	SEX DESIRE BOY	PREFERENCE CHILD GIRL	ANY
Andaman & Nicobar Islands	22.5	16.4	37.4
Andhra Pradesh	23.1	11	62.2
Arunachal Pradesh	29.9	13.2	27.3
Assam	34.4	18.1	22.1
Bihar	41.1	6.8	20.1
Chandigarh	24.6	8.7	38.1
Chhattisgarh	35	9.3	40.9
Dadra & Nagar Haveli	31.6	12.6	21.6
Daman & Diu	23.5	8.6	28.9
Delhi	22.5	11.1	50.6
Goa	23.7	14.4	57.8
Gujarat	36.6	8.5	23.3
Haryana	34.4	9.9	38.2
Himachal Pradesh	27.6	9.7	37.1
Jammu & Kashmir	32.5	9.7	20.4
Jharkhand	35.1	9.7	21.4
Karnataka	25.4	14.7	54.2
Kerala	16.5	16.7	61.9
Lakshadweep	14.8	15.5	65.5
Madhya Pradesh	42.8	8.7	27.2
Maharashtra	32.4	13	40.2
Manipur	42.1	23	28.6
Meghalaya	11.1	14.5	48.4
Mizoram	22.4	19.9	47.7

	SEX DESIRE BOY	PREFERENCE CHILD GIRL	ANY
Orissa	35.7	9	43.1
Puducherry	14.1	16.4	63.8
Punjab	33.4	7	35.5
Rajasthan	44	9.2	31.6
Sikkim	31	23	42.5
Tamil Nadu	15.9	10	72.6
Tripura	38.5	20.4	20.1
Uttar Pradesh	37.9	8.6	33.1
Uttarakhand	35.1	8.2	33.4
West Bengal	33.5	18.1	25.3
INDIA	33.2	11	36.3

- This differential between stated need and stated empowerment in respect of health care decisions gets aggravated for the worse when we look at the actual utilization of interventions in respect of women's pregnancy and its management (Tables 4,and 5). More than 50% of pregnant women get their deliveries done at home; even when emphasis is on institutional delivery under care of trained personnel. Although the variation across the states is quite large, leaving out two states of significant size and population, all other units show that at least 23% of its pregnant women get their deliveries conducted at home. This is despite a government campaign to go for institutional deliveries. A look at reasons for such a decision (Table 5) indicates that in greater than 60% of case of home delivery, reason has nothing to do with the condition of the pregnant women and is against the standard message of the medical community and the health care system. This reluctance to go for institutional deliveries is across states (Barring Kerala and Tamilnadu) irrespective of the levels of female literacy and women empowerment. Here the family asserts it right to take the decision. It is very evident from the list of reasons given for not undertaking institutional delivery.

Table 4: Indicators of apparent morbidity and mortality due to pregnancy in women in India—DLHS 3 2007

	Pregnancy outcomes		Home delivery	pregnancy complications	post pregnancy complications
	live birth	mortality			
Andaman & Nicobar Islands	95.1	4.9	23.4	55	22.9
Andhra Pradesh	93.9	6.1	27.8	42.4	25
Arunachal Pradesh	96.3	3.7	52.2	29.7	16.4
Assam	90.1	9.9	63.8	60.2	42.8
Bihar	93.2	6.8	71.6	75.7	57.4
Chandigarh	92.7	7.3	23.9	42.9	18
Chhattisgarh	92.8	7.2	81.6	43.7	21.6
Dadra & Nagar Haveli	98.5	1.5	56	59.1	29.5
Daman & Diu	94.2	5.8	35.3	55.1	21.2
Delhi	86.6	13.4	30.7	66.3	27.1
Goa	91.4	8.6	3.6	64.3	26.8
Gujarat	96.1	3.9	42.2	47.9	25.6
Haryana	84.5	15.5	52.7	56.5	28.3
Himachal Pradesh	96.8	3.2	51.2	54.8	32.9
Jammu & Kashmir	93.4	6.6	44.1	59.5	45
Jharkhand	96.6	3.4	81.9	67.5	47.2
Karnataka	93.1	6.9	34.1	50.1	28.6
Kerala	90.1	9.9	0.6	63.6	21.5
Lakshadweep	93.9	6.1	9.1	50.1	16.8
Madhya Pradesh	95.5	4.5	52.3	61.3	41.4
Maharashtra	90.9	9.1	35.9	58.2	38.7
Manipur	88.6	11.4	58.3	33.5	18.8
Meghalaya	98.2	1.8	74.8	44.8	23.7
Mizoram	96.2	3.8	43.9	43.9	23.9
Orissa	94.2	5.8	54.7	59.6	33.4
Puducherry	91.2	8.8	0.8	51.4	16.5
Punjab	91.2	8.8	36.5	46.4	21.4
Rajasthan	95.4	4.6	53.8	57.4	29.6
Sikkim	94.5	5.5	49.4	71.8	47.4
Tamil Nadu	88.6	11.4	5.7	47.8	18.8
Tripura	92.9	7.1	53.7	53.6	28.1
Uttar Pradesh	89.8	10.2	74.6	63.9	48.2
Uttarakhand	97.5	2.5	69.5	60.8	42.8
West Bengal	90.9	9.1	50	72.4	45.9
INDIA	92.2	7.8	52.4	58.8	57.7

Table 5: Reasons for home delivery – DLHS3 2007

	REASONS FOR HOME DELIVERY AS % OF HOME DELIVERIES						
CRITERIA	AGE GROUP		RESIDENCE		WEALTH STATUS		INDIA
	15-19	>35	RURAL	URBAN	LOWEST	HIGHEST	
Not Necessary	34.4	34.6	34.5	32.9	33.7	36.3	34.3
Not Customary	7.9	6.1	10	8.7	8.1	0	8.1
Better Care At Home	17.1	15.6	18.7	20.5	14.9	25.5	17.3
Family Did Not Allow	8.4	6	6.7	7.2	6.2	6.5	6.8
Total	67.8	62.3	69.9	69.3	62.9	68.3	66.5
Home Deliveries As %							

When we look at the morbidity caused by pregnancy, greater than 50% of women have complications during pregnancy and a similar >50% have post pregnancy complications. Clearly, the reluctance to go for institutional delivery is a significant contributor to avoidable maternal mortality and morbidity. Considering the significant birth rate in India (20 per 1000 population), this maternal morbidity should have been the focus of feminist policy drive. Policy exists, but emphasis is lacking as is evident from the continuing high levels of maternal mortality and morbidity, both as a country and across the states.

- Same is the fate of use of permanent methods of family planning (See Table 7). The use and preference for female sterilization is highly skewed in its favor, although it is a known fact that male sterilization is easier and least complicated than female sterilization. The impact of rebound of male domination is evident from the changing preferences for female sterilization from 1982 onwards and getting worse from 1991 onwards (Table 8). This exactly overlaps with the rise of strident feminism –second wave in India. This is another case of unduly subjecting females to unwarranted and avoidable risks.
- Similar problems are found in schooling of girl child (Table 6). The Reasons for girl child school dropouts are similar to that of women not being given provision of institutional deliveries.

Table 6: School drop out rates and reasons for dropouts DLHS 3 2007

CRITERIA	SCHOOL DROP OUTS					
	AS % RURAL		URBAN		TOTAL	
	BOYS	GIRLS	BOYS	GIRLS	BOYS	GIRLS
Got Married	0.2	5	0.1	2.8	0.2	4.5
Further Education Not Required	9.1	9.3	9.1	11	9.1	9.7
Cost Too Much	12	13	12.8	17.3	12.2	14
Required For House Hold Work	12.9	20	12.4	18.2	12.7	19.6
Not Interested In Studies	24.1	14.3	24.9	15	24.3	14
Drop Out Rate 6-11years	1.4	1.7	1.1	1.1	1.3	1.5
Drop Out Rate 12-17years	16.5	21.1	14.4	14.3	15.8	19

Table 7: Difference between awareness and actual utilization of family planning methods –DLHS3 2007

AWARENESS AND UTILISATION OF FAMILY PLANNING METHODS				
	AWARENESS		UTILISATION	
	MS	FS	MS	FS
Andaman & Nicobar Islands	81.1	96.5	1.4	48.9
Andhra Pradesh	89	99.4	4.1	61.6
Arunachal Pradesh	65.5	99.2	0.5	32.2
Assam	51.7	93.4	0.2	11.5
Bihar	89.9	99.3	0.4	26.1
Chandigarh	98.5	99.9	0.9	32.9
Chhattisgarh	90.6	99.2	2.3	42.8
Dadra & Nagar Haveli	82.5	98.5	4.6	41.6
Daman & Diu	75.9	99.4	0.2	44.4
Delhi	96.2	99.4	0.8	24.5
Goa	66.4	98.7	0.2	25.2
Gujarat	70.8	96	1.9	44.3
Haryana	95.9	99.8	1.2	38.5
Himachal Pradesh	93.8	99.1	7.8	47.2
Jammu & Kashmir	88	96.2	1.5	26.5
Jharkhand	65.6	91	0.4	25.7
Karnataka	68.7	99.4	0.2	58.3
Kerala	90.3	99.4	0.8	49.1
Lakshadweep	85	98.9	0.2	10.4
Madhya Pradesh	85.6	98.4	1	47.1
Maharashtra	85.3	98.3	2.9	53
Manipur	78.4	90.7	0.4	6
Meghalaya	35.1	76.1	0.1	8.6
Mizoram	58.9	98.6	0.1	41.1
Orissa	76.9	97.5	1.2	28
Puducherry	86.6	98.8	1.8	50.3
Punjab	94.9	99.8	0.7	35.3
Rajasthan	92.7	99.4	0.6	42.6
Sikkim	97.4	99.5	5.3	23.2
Tamil Nadu	81.2	99.6	0.3	55.5
Tripura	65.1	97	0.2	15.4
Uttar Pradesh	86.4	98.6	0.2	17.5
Uttarakhand	90	98.1	2.4	41.3
West Bengal	83.1	99.3	0.5	35
INDIA	82.9	98	1.1	35.8

Table 8: Changing preference for female sterilization over time

Ratio of tubectomies to total sterilizations performed				
Year	Vasectomy	Tubectomy	Total	Ratio as %
1980-81	4,38,909	16,13,861	20,52,770	78.6
1981-82	5,73,469	22,18,905	27,92,374	79.5
1982-83	5,85,489	33,97,700	39,83,189	85.3
1983-84	6,61,041	38,71,181	45,32,222	85.4
1984-85	5,49,703	35,34,880	40,84,583	86.5
1985-86	6,39,477	42,62,132	49,01,609	87
1986-87	8,09,605	42,33,580	50,43,185	83.9
1987-88	7,54,086	41,85,670	49,39,756	84.7
1988-89	6,17,331	40,60,846	46,78,177	86.8
1989-90	3,41,581	38,46,582	41,88,163	91.8
1990-91	2,54,905	38,70,650	41,25,555	93.8
1991-92	1,74,201	39,15,838	40,90,039	95.7
1992-93	1,50,719	41,35,587	42,86,306	96.5
1993-94	1,50,235	43,47,215	44,97,450	96.7
1994-95	1,43,866	44,35,648	45,79,514	96.9
1995-96	1,23,748	42,98,571	44,22,319	97.2
1996-97	72,006	37,98,220	38,70,226	98.1
1997-98	71,352	41,67,162	42,38,514	98.3
1998-99	1,02,656	41,04,070	42,06,726	97.6
1999-00	86,742	45,08,724	45,95,466	98.1
2000-01	1,09,902	46,25,247	47,35,149	97.7
2001-02	1,11,458	47,15,807	48,27,265	97.7
2002-03	1,21,694	47,81,694	49,03,388	97.5
2003-04	1,14,295	48,10,529	49,24,824	97.7
2004-05	1,37,288	47,88,594	49,25,882	91
2005-06	1,65,457	45,39,739	47,05,196	77.7
2006-07	1,22,749	44,54,031	45,76,780	97.3
2007-08	2,26,882	47,91,811	50,18,693	95.5
2008-09	2,93,953	46,69,179	49,63,132	94.1
2009-10	2,68,379	47,29,192	49,97,571	94.6
2010-11	2,19,864	47,89,458	50,09,322	95.6

These examples clearly highlight the disconnect between awareness among females of what is a preferred health care intervention, their actual desire to limit the medical conditions associated with pregnancy and limit number of pregnancies itself, the apparent indicators of high percentage of women empowerment (Percentage of women having freedom to choose their health care decisions (DOHCFEM) and the low levels of actual decisions in practice. Under the present system in the Government health care, institutional deliveries requires the consent of the male head of the family. This will be true for pregnancy delivery and female sterilization. Although indications

exist that females are being empowered to take these decisions, yet it is a fact that these are more a decision of the family than an individual female's independent decision. Family decisions involve opinions of the husband, wife and other senior members of the family, where joint families are a norm. This is the case in India. Hence, to think that allowing a female liberty to take these decisions, especially in India, would improve women's health is to be blind to realities. This may be more practical and feasible in cultures where nuclear or single parent families are the norm as seen in developed countries.

The key message is that Family decisions are to be taken by the family as a whole. It is better to change attitudes of family decision makers, and have resultant women empowerment (case of Kerala –Narayana 2010) to foster women education and health than seek women empowerment as direct consequence.

The second impact of strident feminism has been cases where individuation (Assertion of individual's choice) has led to more problems for women themselves.

- The example of seeking exclusively female gynecologists to be on call and attend deliveries of pregnant women in kerala is a classical example of overemphasis of individuation or individual choice and preference based on gender. In kerala, the primary health centre does not conduct any deliveries because of this insistence. All deliveries are done in hospitals, either private or district and medical college hospitals. District hospitals and medial college hospitals do 700-1000 deliveries in a month. There are at least 6 or 7 emergency calls for attending complications every day. This ensures that gynecologist is required for large periods in a day. By insisting for a lady gynecologist, the resources of the state are being stretched to a very large limit. This insistence is spreading to other parts of the country (Narayana 2010).
- A Similar trend is being done to get only lady doctors to see lady patients, especially for medical conditions peculiar to them. The government of India is policy bound to provide a lady doctor at each PHC and is struggling to actually provide them.

  The impact of individuation has been on policy to accede to such requests as seen in the above two examples and create huge problems for the system. Production of doctors itself is a long process. Systemic vacancies of doctors exist in the public health care system of India, irrespective of

gender. To have a fight on gender to fill vacancies is creation of worse conditions. This is because it is now dependent upon girls attaining higher education and then medical education and finally specialization in obstetrics and gynecology. This means a much longer process than getting doctors to render services—which should be the aim and focus. The outcome has been poor confidence of people in government health services, because of vacancies and its inability to position doctors of any kind (Narayana 2010).

The key message is that in the field of health and education, attending to problems of women is more important than fostering gender based resource provision. The society would benefit if health and educational status of women were enhanced by providing appropriate resources and services, irrespective of gender orientation.

The third impact is where strident feminism has not been able to make inroads, but women have actually been the focus and fulcrum of action is in respect of decision making. Here impact has been positive and benefitted the health of women and child.

- The example of management of Diarrhea and upper respiratory tract infections in children helps highlight the above point succinctly (Table 9). Here the increased awareness among women has resulted in increased use of associated health care interventions and has contributed to decrease in under five child mortality.
- A second example is the ability and increased recognition that more and more women are coming forward to get medical treatment for their reproductive tract infections (Table 9) and infertility (Table 10).

Table 9 : Awareness and utilization of health interventions—DLHS 3 2007

AWARENESS OF SIGNS OF DISEASE AND THEIR UTILISATION AS PERCENTAGE OF WOMEN SAMPLE						
	AWARE ORS	USE ORS	AWARE ARI	Sought TRT ARI	INFERTILITY HAVE	Sought TRT
Andaman & Nicobar Islands	74.6	71.8	36.8	82	3.3	80.8
Andhra Pradesh	41	43.8	33.9	80.1	10.9	68.7
Arunachal Pradesh	80	64.6	66.6	80.8	2.9	77.2
Assam	50	34.9	40.1	66	4.7	73.9
Bihar	23.8	22	79.8	78.8	12.4	82.9
Chandigarh	78.5	34	99.4	100	6	80.4
Chhattisgarh	59.1	36.3	47.6	74.4	11.3	63

AWARENESS OF SIGNS OF DISEASE AND THEIR UTILISATION AS PERCENTAGE OF WOMEN SAMPLE						
	AWARE ORS	USE ORS	AWARE ARI	Sought TRT ARI	INFERTILITY HAVE	Sought TRT
Dadra & Nagar Haveli	49.8	49.8	36.8	87.2	5.6	76.9
Daman & Diu	56.9	32.2	54.1	96.4	7.6	88.5
Delhi	72.4	48.5	86.2	89.1	8.6	93
Goa	75.4	69.9	48.6	82.1	13	85
Gujarat	42.7	36.7	52.8	79.5	6.3	81.8
Haryana	43.3	31.7	76.9	88.1	11.1	88.6
Himachal Pradesh	76.8	60.7	67.6	83.9	4.9	82.2
Jammu & Kashmir	51.6	53	58.8	84.1	8.7	84
Jharkhand	45.5	21.4	41.4	62.1	9.4	72.3
Karnataka	64.9	46.1	43.1	80.9	7.6	77
Kerala	62.1	45.6	38.5	89.8	10.5	85.5
Lakshadweep	54.9	55.8	12.5	90.9	12.2	81.5
Madhya Pradesh	53.8	30	66	68.4	6.9	74.5
Maharashtra	35.2	44.2	28.9	84.6	8	76.2
Manipur	46.6	51.6	36.2	53.1	7.1	69.2
Meghalaya	59.9	45.5	21.5	82.6	2.3	76.7
Mizoram	89	54.9	54.8	59.4	4.8	76.3
Orissa	73.4	49	22.9	66.8	7.6	64.9
Puducherry	49.7	53.8	23.7	87.9	6.3	90.2
Punjab	46	52	98.4	92.8	8.8	95.1
Rajasthan	37.3	30.6	97.9	75.7	4.9	82.8
Sikkim	47.9	47.8	65.7	55.5	7.5	67.4
Tamil Nadu	31.1	37.5	6.9	84.6	6.7	74
Tripura	65.3	58.8	27.8	73.7	6.4	78.3
Uttar Pradesh	35.1	17.4	71.5	76.6	10.1	83.8
Uttarakhand	61.3	43.6	64.3	69	5.2	68
West Bengal	53.4	46.4	43	81.9	14.1	87.7
INDIA	50.3	34.2	56.9	77.4	8.2	80.9

Table 10: Morbidity due to Reproductive tract diseases and treatment sought —DLHS 3 2007

Reproductive tract infections and diseases				
	symptoms awareness	Actual symptoms discharge	others	Treatment sought
Andaman & Nicobar Islands	38.1	11.1	14.3	42.4
Andhra Pradesh	23.6	7.2	11.9	52.3
Arunachal Pradesh	19.6	4.8	10	36.9
Assam	16.8	14.4	27.3	35.3
Bihar	39.9	17.5	21.1	39.9
Chandigarh	53.5	3.5	4.4	44.1
Chhattisgarh	38.5	2.8	6.2	39
Dadra & Nagar Haveli	23	12.2	27.6	38.5
Daman & Diu	32	9.4	13.6	52.3

Reproductive tract infections and diseases				
	symptoms awareness	Actual symptoms discharge	others	Treatment sought
Delhi	45.4	11.2	13.7	54.4
Goa	35.3	9	18.2	48.5
Gujarat	22.6	9.7	16.7	33.5
Haryana	39	14.3	16.3	52.6
Himachal Pradesh	44.8	8.2	18.3	43.3
Jammu & Kashmir	24.3	22.4	36.9	53.6
Jharkhand	17.2	9.4	20.4	26.3
Karnataka	37.1	10.6	14.1	41
Kerala	75.8	9.2	12	52.6
Lakshadweep	57	7.4	6	59.6
Madhya Pradesh	16.5	24.6	26.5	30.3
Maharashtra	27.1	8.6	18.1	50.7
Manipur	46.8	7.7	20	29.7
Meghalaya	7.6	10.1	17.4	33.4
Mizoram	44.6	9.9	32.2	33.3
Orissa	14.2	3.8	8.5	33
Puducherry	45.3	3.2	5.8	58
Punjab	59.4	5.9	9.9	67.3
Rajasthan	46.3	15.5	15.5	34.4
Sikkim	28.2	10.5	21.2	32.7
Tamil Nadu	26.9	4.3	6.8	46.9
Tripura	31.7	8.2	16.2	38.4
Uttar Pradesh	29.1	19.8	19.9	40
Uttarakhand	29.2	13.2	26.4	29.9
West Bengal	34.4	21.5	26	43.3
INDIA	33.3	13.4	18.2	40.5

Why is that in the above two conditions, increased female empowerment is not linked to increased awareness and utilization of interventions? For eg (See tables 2, 7 and 8)—the states of Assam, Haryana and Sikkim where the Female empowerment is high (DOHCFEM), yet utilization of interventions is much lower in terms of Institutional delivery, Treatment of RTI and infertility, URI etc as compared to states of Goa, Karnataka and Andhra Pradesh. The difference is because of two reasons:

- When the women has to get actions undertaken or use interventions, as is usual in a family condition in respect of children, her instincts for care of child will motivate her to take necessary actions, irrespective of empowerment. The fact that in many house -olds in India, the mother is the sole adult left over to take care of children does not give her any

choice to seek decisions from her male counterpart. So actions are ensured irrespective of empowerment. Such decisions in a family are based on agreed division of work at home between the male and the female.

- On the negative side, when empowerment is there but access is a problem—either due to non availability of service or due to transport and effort required less utilization results. This account's possibly for a smaller percentage of cases.

  The key message from these examples is that agreed work allocation in a family is more desirable than stated women empowerment.

Key message from analysis of Literature and secondary data from India

The concept of gender /sex—a natural label—has been more used to propagate arguments and debates so as to serve as a symbol of power. This has been done by shifting the focus of women from working in a collaborative frame of a family to a competitive frame of fight for domination and power emphasizing differences in gendered behavior as inequalities and domination by male sex. The debates have shifted from natures given characteristics and its impact on social institutions like family, race, class work roles etc to arguments over how these nature's given differences have been nurtured into biases and exclusion from activities associated with social institutions. What has been missed out in the seeking of rights for women is to neglect the role of Family as a decision making body in respect of its economic and social activities. What is also neglected is the cooperative role of the genders in managing a family. This aspect is very much a societal culture dependent activity. This just cannot be ignored. The family will assert its rights in alternate ways –such as allowing access to interventions or their use. It pays much more to have inclusive development of gender as part of the family development than seek a right's based invidualistic development of women.

Based on the learning's from the above mentioned examples, the paper now draws a conceptual framework for inclusive needs based women's development attuned to their role in a family and their individual needs.

A Conceptual relook at gender

Evolutionary psychologists emphasize that men and women have developed behavior patterns based on different reproductive strategies. Men can only help in procreation but cannot go through the process of procreation. Further, in human societies, survival is based on an "All live" policy where efforts are to support life irrespective of its ability to survive normally. In nature and animals, Darwinism rules –"Survival of the fittest". Secondly Procreation in human societies is volitional while in Animal societies and nature procreation is virtually programmed and deterministic. While Nature has its own resources and controlling system, human societies are entirely dependent upon nature for resources and have to exercise self control. Hence human societies are prone to competition much more than nature and animals where collaborative strategies are the norm. Finally, speech as a capability is seen only in humans. This with a combination of competition, which is inherent in human societies, makes them argumentative and uses it to express dominance. One way to counter dominance, based on vocal domination, is to adopt activities, which are easy to execute and where impact on society is marginal while visibility is maximum—a form of tokenism. This coupled with the fact that implementation has been the Achilles heel of the fields of public policy and management (Narayana 2010) has only accentuated the advantage of tokenism. In view of these facts, there is a need to have a paradigm shift from a competitive positioning of gender –as feminism demands to a balanced view where both nature and nurture are positioned in a collaborative mode.

A solution to addressing of inequalities

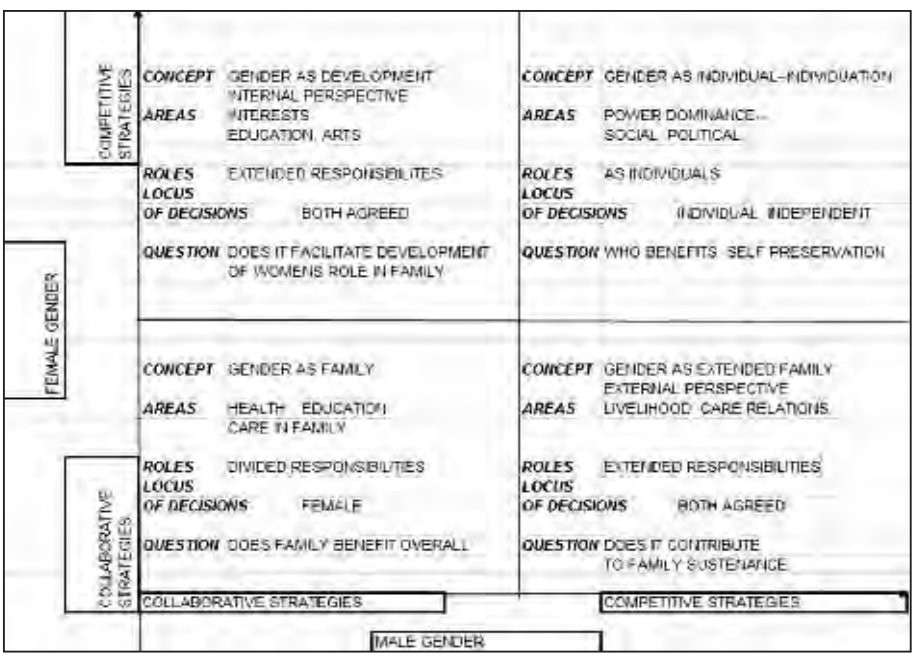
Given the fact that nature's given characteristics cannot be altered, there is a need to facilitate development of social institutions to help mankind /people lead lives which are meaningful and free from denial of access to livelihood, nutrition, health care and right to pursue legitimate interests. This means that existing inequalities need to be addressed. It also means shifting to look at concept of gender in two aspects:

- Gender as a collaborative concept associated with family as a social institution –needs approach—how the rights for decision making achieving the needs should be located in women.

- Gender as a collaborative concept associated with livelihood and political processes in society—rights approach—how the rights for decision making for achieving the rights should be as an agreed issue at the family level.

So instead of looking at gender and sex as distinct concepts, we can look at these as parts of the same continuum wherein the role as ordained by nature is sex at one end of continuum and the socially constructed individualistic and existential concept of gender at the other end. By looking at role of each sex in the social process of family creation, propagation and succession arraigned against type of strategy used to achieve benefits for the family or individual as the case may be, the concept of gender can be seen to consist of four archetypes as given below in figure 1.

Figure 1: Gender as a concept based on roles and strategies to be adopted for advancement of that role.



The gender archetypes

- *Gender as Family:* Family is a societal creation. It is where the genders meet to sustain it physically as procreation and as work output for economic and social development. Thus Family becomes a critical goal towards which both males and females work and are motivated to

contribute. Hence, Family can and should become the Basis for policy actions. Development of a family, economically, socially and biologically, requires collaboration between the genders. Collaboration is required to meet and procreate. Collaboration is also required to assure economic and social actions which bring material and psychological strength, to sustain these over time and teach to the next generation the benefits of such collaboration. The entire emphasis in this archetype is does the family as a unit benefit—separate and overriding over individual benefits. Family thus will necessitate division of work and its associated responsibilities. The critical areas where this is essential for maximum beneficial impact is in the fields of health care and education. These two are fundamental to economic and social development. There is a necessity that each gender takes up divided and agreed responsibilities with respect to generation of resources for accessing health care and education opportunities and ensuring that such accessed opportunities are effectively utilized for development of family members. It will be extremely difficult for one member to do both these roles. Collaboration between genders becomes essential, if inclusive development has to occur, including the females. So one option is to allow males to manage market activities while females take the responsibilities of social activities such as health and education. The state of Kerala is a classical example of such collaborative division of familial responsibilities. Researchers have identified that the critical reason for Kerala having achieved high human development indicators is the positive and agreed role of women in active decision making in respect of family's health and education needs (Narayana 2010).

- ***Gender as development of females:*** This is an internal perspective, where the emphasis s on development of the female to sustain a family. The aim is to facilitate all the interests of the female in terms of education, arts, and other interests which are beneficial for execution of agreed role of woman in the family. This is an agreed decision between the genders, collaborative and hence supported. Yet it is a family decision. The interests of the family come first. This involves decisions of the family in fields other than health care and education. These are more attuned to development, non economic and care role for both the genders. Here the gender is executing a supporting role.

- ***Gender as Extended family:*** This is an external perspective. The aim is to contribute to family's sustenance. Here the women, if is looking for an economic role would be competing with others vying for jobs, but within the family, there is no competition with the male/ husband. This would be an agreed decision and will be of the family. Being collaborative, the agreement will also be on the distribution of other family activities.
- ***Gender as an individuation role:*** Here the family takes a back seat. Decision making is individual driven and competitive, both within the family and outside. Self interests dominate. It is more for power and domination, both within the family and outside. This is what is being sought by feminists and policy makers seem to be more attuned to it. The only issue, in such competitive stances, there would be competition not only among genders, but it will also be seen amongst races, castes, nationalities etc. this is what is seen in form of cry for national and regional quotas and reservation for jobs.

The above conceptual framework is based on the following key principles:

- Differences in roles are not inequalities. Differences in roles for gender are to some extent nature given and to a large extent family driven. Differences in roles do not indicate domination.
- Gender is an extension of family and not vice versa. Gender must sub serve the family needs.
- Development of family is more likely to facilitate gender and women's inclusive development. This eliminates competition among families for economic resources to a great extent.
- Family decisions are to be agreed decisions of the family. There is greater merit in changing attitudes of family members and through them women's development and removal of inequalities.

The aim is to identify which decisions are of the family and which are agreed decisions but to be taken by each gender in a collaborative way. For eg when Husband and wife or male and female member of a family decide on their roles in a family, then subsequent decisions as per role is individual's decisions but in the interest of the family. Individuation or pursuit of rampant self interest is to be discouraged. Here if a male takes up care role as part of family interest than that role is to be done to ones best abilities. What

is seen in societies is such a collaborative combination (Ungerson 2006), yet feminists have been trying to show and make us believe that male domination is being selectively perpetuated (Delphy and Leonard 1992). Policy makers have given in to such a view point, more as a form of tokenism. Thus there is a need to reorient our policy focus back to women's development. The above conceptual tool is an aid to facilitate this reorientation.

Policy implications

This conceptual reorientation has immense policy implications in respect of where the locus of decision making to facilitate use of key programme instruments. It also influences the content and how the messages to address attitudinal impediments in the use of these key instruments is to given.

- Literature has clearly indicated that attitudes are the bases for health care decisions and its subsequent actions in form of use of interventions (Narayana 2011d; Ajzen 1991; Leganger and Kraft 2003; Dewalt and Hink 2009; Cutler and Lleras- Muney 2010). Attitudes need to be addressed and changed. The mechanism of messaging to achieve this objective is to be reoriented both in content and target persons. In the cases where Family is the locus of decision making as in case two quadrants (See Figure 1) of "Gender as development and Gender as extended family", the messaging content and target audience are the family members. For eg messaging for adult education in women and men and job skills development should be addressed as to how it will enhance capability in females and through it the family's ability to develop economically and socially. There should be a tendency to link women development in these cases to family development.
- In the case of the quadrant "Gender as Family" dealing with health and education, the messaging must be addressed to family members. The emphasis is to change attitudes of key members of family. Women empowerment should be suggested as a means to enhance family status. The family must be the core focus of all incentives and activities in these spheres and the accessing of the interventions should be directed through the female so as to facilitate all time faster access and utilization. Messaging directly to women as stand alone empowerment would not fructify (As already discussed in above paragraphs on inferences from data). For e.g. it is easy to suggest that decisions on access and use of

interventions concerning Self, children and elderly aged in family must be operationalised through the female—(wife) or the person who is always likely to be available in the house. Hence the locus of decision making should thus be with the females of the house in majority of the cases. Health behavior models show that where ever women is the centre of decision making, utilizations of health care interventions has been better and therefore health outcomes are better. Women are more likely to be sensitive to changes in health conditions of self and children and husband and so are more likely to seek opinion and consultation early. This would actually reduce mortality and morbidity

- In the case of the quadrant "Gender as individuation", this should be least stressed and best left to demographic and social pressures. Economic activity, being presently male dominated in the field, should be propagated by delinking familial decision making on health so as to speedup up use of interventions.—give separate decision making rights so as to cover the total family context.
- To ensure evidence based policy initiatives, data on basis of gender should be collected and analyzed. This would be context dependent and hence decision making should also be context sensitive.

To summarize, Policies of the government must reorient itself to make Family as the central concept in case of health, education and economic development and link gender to the development of family, instead of propagating gender as a stand alone initiative. Women's empowerment must be stressed as essential for family development in the messaging where attitudinal changes are being attempted. Data in all evaluations must record separately for gender as Sex so at get a evidence based idea of inequalities.

Conclusion

The concept of gender in policy research is of recent origin. Nature's differences in construction of gender established a differential pattern of behavior. Our understanding of such differences in behavior has been overshadowed in policy by a more stark reality of power differential and resultant inequalities in economic and social outcomes. Despite visible inequalities in access and use of social and economic instruments, Gender invariably gets subsumed in discussions on inequalities under economic and political aspects of inequalities. The resultant rise of feminism and strident

demand for voice and representation has not significantly altered these inequalities. This paper used secondary data from rural health care programmes in India to substantiate these arguments and provides a more collaborative agenda for women development. It suggested that the gender and family must be viewed together for policy making, especially in fields of health and education. This would ensure more purposed and equal use of interventions. Its resultant economic and social impact would only facilitate greater economic contributions from families in a population by their impact on decisions of fertility, child and maternal health, education and economic activity.

Thus this paper proposes a conceptual framework for a collaborative agenda on women and gender to ameliorate the present starkly visible inequalities.

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