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## Pradhan Mantri Gram Sadak Yojana:

Visibilising Gender in Rural Road Connectivity

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# Pradhan Mantri Gram Sadak Yojana:

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## I. Executive Summary<sup>1</sup>

This policy brief aims at incorporating a gender-sensitive analysis within the framework of public policy, especially a Centrally Sponsored Scheme (CSS) like *Pradhan Mantri Gram Sadak Yojana* (PMGSY) that has an encompassing impact. Prevalence and persistence of gender inequality is often caused and reinforced by interlinked cultural, social, and economic factors that set off chain reactions widening the gender gap. Identifying a clear demarcation amongst men and women with respect to the needs and usage of physical infrastructure in the context of PMGSY and its resultant differential impact is crucial to an equitable development process and inclusion of those maimed by restrictive existence at the fringes of the rural economy. This policy brief emphasises that physical infrastructure determines, to a large extent, access to opportunities, knowledge and information thus manifesting itself as a tool for policy makers to bridge the wide gap that plagues the societal structure with gender disparities. It therefore identifies and reinforces through recommendations the importance of recognising existing gender-differentials in various spheres and hence the necessity of incorporating them at the decision-making as well as the execution stage.

## II. The Context

Rural road projects akin to PMGSY achieve substantial progress in terms of enhancing inclusive growth, the prime reason being that they open up new opportunities for villages existing in isolation and characterised by poor connectivity where the local people especially women are severely impacted by costly, time-consuming, inconsistent, and inconvenient accessibility which adversely affects both capital and human capacities and opportunities.

The *Pradhan Mantri Gram Sadak Yojana* was launched in December 2000 to provide all-weather road connectivity to 1.6 lakh unconnected habitations with a population of 500 or more in the rural areas by the end of the Tenth Plan Period (2007) at an estimated cost of Rs. 60,000 Crores. This flagship programme was initiated in recognition of the fact that rural road connectivity is a key component of both growth and development strategies, the provision of all-weather access to unconnected habitations being funded by 50 per cent of the cess on High Speed Diesel.

The Ministry of Rural Development (MoRD) executes the programme as a 100 percent Centrally Sponsored Scheme in all states and union territories. Now part of *Bharat Nirman*, all unconnected habitations with a population of thousand persons and above are to be provided all-weather connectivity. Regional specificities have been integrated into the PMGSY, with habitations with 250 persons being connected in the three demarcated categories of Hill States, Desert Areas, and Tribal (Schedule V) Areas. The Hill States identified are the North-east, Sikkim, Himachal Pradesh, Jammu & Kashmir, and Uttaranchal. Desert Areas are those specified under the Desert Development Programme in the seven states of Andhra Pradesh, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, and of course Rajasthan; these 40 districts constituting 234 blocks cover an area of 457949 sq.kms. There are 82 districts under Schedule V as determined by the Planning Commission, Government of India, spread over the nine states of Bihar, Madhya Pradesh, Orissa, Uttar Pradesh, West Bengal, Chhattisgarh, Jharkhand, Andhra Pradesh, and Maharashtra.

MoRD assesses PMGSY at three crucial and essential levels – ‘an unbiased review of social and environmental aspects, identification of potential environmental and social risks, and associated mitigated mechanisms for the

<sup>1</sup>This Policy Brief draws on valuable inputs provided at a UN Women-Centre for Gender Economics, Department of Economics, University of Mumbai organized National Consultation on ‘Engendering Physical Infrastructure via *Pradhan Mantri Gram Sadak Yojana*’ held in Mumbai on April 8-9, 2012. It brought to the table dignitaries from academics, civil society and policy makers including Hon’ble Jairam Ramesh, Minister of Rural Development, Government of India. Several regions were represented in the context of the conceptual framework delineated by the Consultation organisers who have worked on this issue. A large number of essential interventions were put forth, via key recommendations, to address critical gender concerns while strategising, structuring and framing CSS’s like the *Pradhan Mantri Gram Sadak Yojana* (PMGSY).

identified risks'. Unfortunately, none of these take into consideration the gender component and thus the implicit and intensely gendered implications of the policy.

The purpose here is not to 'review' either the stated or the perceived objectives of PMGSY in a reductionist manner, nor is it to examine its 'success' or 'failure'. Rather, the fundamental issue is to focus on the gendered processes by visibilising the invisible and articulating the alternatives in the concrete context of the economic and societal reality of women in geographically diverse India. The basic objective is consequently to recognise the gender implications of PMGSY, to integrate these into the design as well as into the evaluative aspects, to widen its scope, to fortify the programme, and to energise and vitalise the latent and hitherto-unperceived and non-incorporated energy contained in PMGSY.

The approach with which the impact of the policy is currently reviewed assumes gender neutrality, which is certainly not the case. While rural road connectivity impacts both men and women, the ways and the proportions differ. The objective thus is to inculcate gender sensitivity when strategising, structuring, and framing policies. Doing so with respect to schemes like the PMGSY, which have far-reaching effects, helps close not only the gender gap prevalent in accessing physical infrastructure, but also makes the policy relevant to half the nation's populace.

The issue in focus represents a move away from the overtly 'gender-sensitive' areas of health and education to 'hard-core' economic areas that are still marooned on a patriarchal island. The contemporary growth paradigm envisages 'closing the infrastructure gap' which has been identified as one of the major constraints to growth in the Eleventh Five Year Plan document as well as the Twelfth Plan Approach Paper. However, physical infrastructure needs to be viewed not merely as a support for rapid growth, but also as an agent for

change; for increasing the physical and societal mobility of people, especially women; an essential indicator of the quality of life; of development itself. This is particularly true in the context of the increasing rural-urban divide.

Road connectivity enhances removal of cultural, social, and institutional obstacles by promoting development to generate economic opportunities and improving women's capabilities and access to opportunities. These form the key ingredients of a policy package for greater progress toward gender equality and inclusive growth.

Gender mainstreaming in rural connectivity implies identifying and addressing gaps in gender equality that impact sector policies, designing, planning, and provision, and thereby internalizing the urgent need to recognise that differential infrastructure constraints exist on men's productive roles, and women's economic, domestic, and community management roles.

Gender-sensitive infrastructural development has not been either focused upon or even debated in India. Also, the issues have inherent heterogeneities which need to be highlighted. The purpose of the current exercise is therefore three-fold:

- Identifying major inter-linkages between gender and physical infrastructure through rural roads and the connectivity component.
- Integrating the results of these debates into a specific governmental programme in order to incorporate gender.
- Strengthening and widening the hugely transformative impact of PMGSY, so that it attains its full potential which is hitherto somewhat truncated by the non-recognition of gender concerns.

### III. Critique of Policy Option(s)

A potentially widely impacting scheme like PMGSY assumes special gendered significance

especially in the context of the increasing feminisation of the agricultural and the rural sector at large. The major concern is assimilating a gender perspective at several levels – the objectives of PMGSY; the process of fulfilling those objectives; and broad evaluation of impacts, possibilities and also potentials of incorporating gender sensitivity. The paradigm envisaged includes and integrates heterogeneities and specificities relating to the concrete reality of women located in demarcated regions and situations – Hill States, Desert Areas, and Tribal regions under Schedule V-which are already contained in PMGSY. To these, we suggest the inclusion of three additional categories namely, Coastal Zones, Conflict Areas, and Border Regions. The ultimate objective is to evolve a clearer perspective of the possibilities of empowerment through infrastructural development via a gendered revaluation and reappraisal of the PMGSY.

#### Visibilising the Invisible:

The most fundamental component of visibilising the often implicit and latent gendered nature of the transport sector – specifically related to rural road connectivity – is the identification of differential needs, which are determined by women's location in the process of production and reproduction in a patriarchal society.

There are differences between women and men in transport purposes and thereby the modes used, also in the extent to which their needs are met by current provisions and transport investments. A major difference is that a much larger share of women's journeys are for household and family needs, including trips to collect water and fuel-wood, visits to health centres, community and social interaction, etc. Most of such journeys are relatively short or local, but have to be taken frequently, thus absorbing considerable time and energy, which directly impact work burdens and the time available for economic activities.

Women's journeys often tend to combine several stops to meet various purposes. It is therefore important to consider whether pathways or transport services connect the destinations important to women, and whether the fare structures facilitate or penalize short journeys or multiple stops. Costs of transport are another important concern with gender dimensions, given women's lower incomes and limited claims on household resources.

#### Transport-based gender differences include:

- **Intensity of transport usage:** Rural transport improvements have promoted economic activities in the previously unconnected areas. The number of times a mode of transport is used on a daily basis and also its regularity is the context in which intensity of transport usage is examined. Due to the varied and complex nature of activities that women tend to be historically associated with, the intensity of their accessing a transport facility is high. With male-centric migration uniformly dotting the rural landscape, women are emerging as the major users and consequently beneficiaries of public transport systems operational in villages. On the other hand, in contradiction, the currently prevailing societal constraints on women's physical mobility outside the private domain reduce their intensity of usage of roads as well as transport.

- **Trip purpose:** It would be tautological to state that the purpose of travel is most likely to impact the pattern of transport usage. The objective of male travel is basically for economic activities, while for women the purpose extends beyond the economic component to incorporate familial, community, social, and maintenance tasks. With increased rural connectivity and availability of all weather roads, traversing to markets in neighbouring villages can be easily managed. Women, in their traditionally defined capacity as small producers, are increasingly accessing roads

and road transport for reaching their output to larger villages and also small towns that fall in the periphery of the village.

- **Trip patterns:** There exists a clear demarcation between the trip patterns made by men and those made by women. Women's travel patterns are quite complex due to the varied nature of their economic and extra-economic involvement and the roles they perform in society. Also, women are more likely to travel off-peak hours, and less often in non-daylight hours.

- **Distance of travel:** The distance factor is probably the most telling, especially while identifying gender differences in accessing road infrastructure. Characteristically, women tend to cover shorter distances while this aspect does not act as a constraint for men. Yet again, as in several other instances, societal restrictions on women attempting to enter the public sphere and to widen horizons constrict the distance they travel.

- **Frequency of travel:** The number of trips women make are largely impacted by their varied roles not only at the economic but also at the household and community levels. Travel frequency analysis must of necessity incorporate the distinction between the participation decision and the frequency decision conditional on participation. This relates, of course, to the level of control that women are able to exercise over transport-related decision making.

- **Mode of transport:** It is a widely accepted fact that there is a clear gender differentiation related to the mode of transport generally used. Also, due to the prevalent gender differentials at the household level, the mode of transport that women can 'afford' to access remains the least sophisticated. The valuation of their time reflects on the valuation of the opportunity cost of their labour; as a consequence, they prefer – both voluntarily and involuntarily – usage of the most 'basic' means of travel. This also restricts their mobility, both physical and societal.

- **Mobility Constraints:** Women's mobility is restricted at various levels by economic as well as extra-economic factors, cutting through multi-layered sectors and sub-sectors – for education especially travelling outside the village for secondary schools; for health especially institutional deliveries; for enhancing livelihood opportunities; for temporary migration even on a daily basis; for fetching fuel and firewood beyond the immediate periphery – the list is long. Lack of appropriate physical infrastructure compounds the situation even more by not ensuring gender-sensitive regular, accessible, affordable, safe and secure all-weather connectivity.

Women-specific needs are transportation of especially primary products as head-load, local markets, inter-and intra-village roads and paths, non-motorised transport (NMT), walking, pedestrian and sidewalk use, and security.

- **Head-load Carriers:** Both as producers and as consumers, women generally carry commodities in baskets as head-loads, more so than men do. This is because while the major proportion of output would be traded at the main market places, the residue production as also women-specific goods are sold through vending and hawking. This relates to primary goods and also to petty production.

- **Local Markets:** The prevailing reality of women being primarily head-load carriers implies that the main reach of their participation in marketing activities is centered in the local neighbourhood. The absence of all-weather road connectivity severely impacts the sale of primary produce, especially that which is perishable, and additionally restricts even peddling of non-agricultural commodities.

- **Inter and Intra Village Roads and Paths:** The controls imposed by patriarchal economic and also societal factors ensure that women are restricted within a 'micro' world, rarely extending beyond a few neighbouring villages. Intra

connectivity in particular is essential especially in a context of inadequate development of gender-friendly infrastructure specifically drinking water availability, sanitation, alternate sources of energy, etc.

- **Non-motorised Transport:** The intensity and frequency of usage of motorised transport by women is clearly less than that by men; this issue relates not only to accessibility but also affordability. Relatively few women access buses, rickshaws, and trains especially for longer distances, although frequency usage does increase along with rise in good road connectivity. Carts are generally preferred, in keeping with women being constrained mainly to neighbouring villages and localised markets.

- **Walking:** The major mode of physical mobility of women – more of course than that of men – is the simple act of walking. Prevailing patriarchal norms make walking more 'socially acceptable' for women, apart from issues of accessibility and affordability. This is true of both rural and peri-urban areas.

- **Pedestrian and Sidewalk Usage:** Walking being a majorly women-specific activity, pedestrian and sidewalks assume a highly gendered significance. The focus therefore on the construction and maintenance of sidewalks needs to be incorporated into road and transportation requirements, with a clearly demarcated pedestrian policy.

- **Security:** The issue of security for women is among the most important components that need to be in-built into all transportation programmes and policies. Some of these include adequate lighting; rest-rooms and dormitories at main bus stations; accessible and functioning toilets; 'request stop' services.

#### IV. Policy Recommendations

Gender mainstreaming in infrastructural development is crucial to identifying and

addressing gaps in gender equality that impact sector policies with regard to framing, planning, execution and implementation. Hence, it needs to be restated and reemphasized that the constraints that impact men's productive roles, and women's economic, domestic and community management roles are varied. This incidentally becomes the first step forward towards bridging the existing and potential gaps, thereby laying the ground for identifying and thus not only removing obstacles to the attainment of gender equality in physical infrastructure, but also expanding the economic and extra-economic horizons of women.

There are several ways in which infrastructural empowerment can be extended and interventions made through gender-sensitive policies. Given below are a series of such methods and interventions, all of which are also perceived as recommendations in the specific context of PMGSY.

##### a. Policy Framework, Operational Guidelines and Strategies

- **Expansion of public sector and extension of gendered regulation in the private sector, including exclusive demarcated services:** The functioning of both the public and private spheres need to be optimized keeping their mutual exclusivity and capacity-for-merger intact. The 'mutual dependency model' needs to be framed in the context of prevailing differentiated gender impacts. Public-private-partnerships in the building and maintenance of infrastructure are a case in point. Skewed partnerships that aim only at profit maximization often ignore the goal of reducing inequalities, resultantly leaving the marginalized and vulnerable sections out of the ambit of benefits. Additionally and importantly, we believe that the private sector has as much responsibility in reducing inequalities, and cannot persist in operating in isolation from societal and especially, in this instance, gender concerns.

- **Incorporating state responsibility in**

**Centrally Sponsored Schemes:** The PMGSY is a Centrally Sponsored Scheme, even though rural roads, according to the Constitution, should be a state subject. It is thus suggested that state governments take up at least part of the responsibility of building village roads. This responsibility entrusted on to the state governments is of extreme importance since it creates a sense of responsible regional proprietorship which is needed for the smooth functioning of any programme, especially one with such far-reaching impact.

• **Inclusion of coastal zones, border regions, and conflict areas in PMGSY:** These areas need a special mention given their sensitive and peculiar characteristics. Connectivity is of utmost importance in coastal zones since the product (fishery produce) being transported is highly perishable in nature. Better storage facilities and quick accessibility to market areas is of great consequence to fisher-folks, especially women as they are the ones involved in marketing. Border and conflict areas too have a special significance given their macro and also micro sensitivity that impact both national and regional developmental scenarios.

• **Special concessions for extra-vulnerable groups such as women and child-headed households; pregnant women; elderly; disabled; MGNREGA job-seekers:** The central issue contained in this recommendation is that accessibility must function in tandem with affordability. The use of roads and the transport thereon is not homogenous, and cuts through and also across several layers and categories of vulnerable and marginalized groups who are excluded in terms of both economic and extra-economic accessibility and affordability. These concessions must compulsorily and strictly apply to the private sector as well, which obviously cannot and should not be permitted to function in a societal vacuum.

• **Systematic policy consultation and support for identifying gaps, strategizing action plans,**

**and gender mainstreaming:** The identification of gaps that are created with respect to access of infrastructural services and facilities borne out of it needs to be prioritised. Incorporation of the suggestions made for the 'closing of the infrastructure gap' should be integrated while framing the policy framework and designs, with systematic gender-sensitive consultations being carried out consistently and continuously.

## b. Execution Mechanism

• **Creation of a gender-sensitive project coordination team and appropriate institutional structures:** Infrastructure teams who are aware of women-specific transport patterns and trends are essential to ensure the attainment of equality both across time and space. Unless gender sensitivity is inbuilt both in terms of coordination and institutional structures from the initial stages itself, no amount of tinkering at a later stage will ensure equality.

• **Formation of sector-wise multiagency steering committees:** In general, commitment to mainstream gender at the national level is not sufficient to guarantee that identified issues will be addressed in transport policies and projects. Gender awareness needs to be increased at various levels of the government to ensure that macro gender policy is incorporated in transport policies and planning. A multi-sectoral framework for addressing both gender and women-specific issues, which can include formation of multidisciplinary teams including gender experts who are knowledgeable about the transport sector, is often required because transport and other line ministries are generally weak or lacking in capacity to address gender and other social factors affecting physical infrastructure projects.

• **Dissemination of guidelines in local languages for operation, management, and maintenance:** Capacity building at the local level will remain a non-starter if guideline material is not available in local languages - the

level of understandability increasing in direct proportion to availability and dissemination. This is especially true of 'low literacy' and 'low skill' areas as well as groups, where visual explanation may be additionally appropriate. This of course relates to all three levels of operation, management and maintenance.

• **Development of appropriate infrastructure in the form of formal mechanisms and services:** Formation of inter-departmental committees at several appropriate levels for deliberations to focus on evaluation of projects in keeping with the objective of gender mainstreaming is essential for systematic assessment of the policy under scrutiny. Consistency in such an evaluation process is crucial to the success of such an endeavour.

## c. Implementation and Maintenance

• **Designation of Forests:** An urgently required clarification is that related to the nomenclature of forests, and the need to protect the common property rights of tribals, especially women who are more severely impacted given their greater historical and also traditional dependence on Common Property Resources.

• **Displacement via PMGSY:** A related aspect, which requires immediate attention, is that of displacement resulting from identification and construction of roads under PMGSY, and the ensuing need for resettlement and rehabilitation. Since compensation to the displaced is provided to the titular head of the household, women – especially tribals – lose whatever limited economic independence they had hitherto enjoyed through free and un-priced access to natural resources. Provisions to ensure joint ownership of the compensation provided become crucial in such circumstances.

• **The issue is not only of building roads but also of maintaining them:** While currently a five-year maintenance clause is built into the construction contract under PMGSY, the local

and regional governments could take over the task of maintenance with full/partial funding from the Centre. Sustainability and up-keep of such a crucial public good and a permanent asset are essential to any developmental strategy in the short term as well as in the long term.

Maintenance could be ensured at the micro-level through the creation of micro-units, akin to the idea of 'transect walk' peculiar to the PMGSY. Due to the nature of this activity, participation and involvement of women will provide policy-makers with means to ensure that effective maintenance takes place in rural areas.

## d. Public Participation

• **Relevant and Appropriate Plantations:** Trees and plants that are livelihood-friendly and sustenance-giving should be selected according to the local geographic and economic environment, and planted along the spaces already identified under PMGSY; the responsibility of maintaining them should be vested with local Self Help Groups (SHG) and *Gram Sabhas*.

• **Participatory project planning and implementation with women and men in communities, including procurement activities:** The PMGSY 'transect walk' is a good illustration. Compulsory participation of men and especially women in decision-making related to the planning, selection, formation, and implementation needs to be ensured. Additionally, procurement related to and determined by the direct beneficiaries will ensure continuity of the assets so created.

• **Women's participation and decision-making in community infrastructure management:** Historically, traditional transport planning models have not considered gender differences in travel activity patterns, particularly differences in relation to trip purpose, frequency and distance of travel, mode of transportation used, mobility constraints to access other sector services such as health, and complexity of trip making. The different

roles of women and men need to be understood and recognised in order to adequately plan and design the spatial and temporal characteristics of the transport modes that both women and men depend on in order to undertake economic, domestic, and social activities. Project experience has shown that including women in stakeholder consultations for the management of transport systems often provides practical insights that can improve transport access and safety for other vulnerable users such as children, the elderly and the disabled. These issues are of course even more crucial in the context of managerial and also administrative empowerment.

• **Gender-sensitive involvement in generating and operating maintenance funds:** The participation and also sense of ownership of people – both men and women – directly impacted by local roads would be considerably intensified and also strengthened if they are permitted to get involved in resource-raising as well as operating their assets. Also, the basis for enhancing numerical literacy, skill up-gradation, technical and also technological knowhow, as well as operational training, would be consequently incentivized.

• **Promoting local cooperatives and SHGs for provision of materials:** PMGSY can give a major boost to livelihood opportunities in the collective domain through accessing relevant road-building materials sourced through and sub-contracted to local Self Help Groups. This would not only further economic empowerment but also strengthen the financial sustainability of these groups, an issue that is under much debate today.

#### e. Mechanisms for Monitoring and Evaluation

• **Linking PMGSY with Gram Sabhas:** Democratization involves the creation of a sense of ownership of what are essentially a community asset and a public good. In this sense,

therefore, it is strongly recommended that roads and works under PMGSY be determined and sanctioned by *Gram Sabhas* rather than *Zilla Parishads*, as is the case at present. This would not only improve the quality and longevity of the assets, but also lead to greater transparency and inclusion. Decentralized governance is an effective step towards ensuring that building of physical infrastructure is not merely either a superficial or a partially-completed development exercise.

• **Systematic institutionalised evaluation via appropriate gender budgeting tools per project, per sub-sector:** Probably the single most effective method of examining and assessing the 'gender-success' of a project is to apply gender budgeting techniques, using the appropriate method and tool – sectoral policy evaluation; audit of distribution of actual inputs, activities, and outputs; benefit incidence analysis; beneficiary assessment; revenue incidence; inter and intra household evaluation; impacts on time-use patterns; mapping of changes in private and public services and expenditures. These processes should be applied to the PMGSY at regular intervals to ascertain the gender-sensitivity achieved.

#### f. Budgets

**Financial resources for capacity building and training of local authorities:** An inherent structural constraint is that of lack of gender-sensitive perceptions, understandings, and world-views in the specific context of the implementing and supervisory authorities. A proportion of allocations for construction and maintenance could be earmarked for gender sensitization and awareness building, as well as training for operation and maintenance of specific and relevant projects being undertaken.

#### g. Gender Assessment Surveys and Sex disaggregated Data

• **Conducting pre-project Rapid Gender Assessment Surveys:** Such surveys analyse the potential gender impact in minute detail thus enabling incorporation of necessary changes at the policy-planning and project-designing stage itself. The results of these surveys would affect and resolve women-specific concerns in several ways, keeping in mind those women generally carry head-loads, prioritise water and firewood sources, access local markets, etc.

• **Gender ratio accessing appropriate physical infrastructure:** One of the most innovative methods of determining the intensity as well as extent of accessing different components of transport is through calculating gender ratios. This would lay the ground plan for deciding which and what aspects need to be both created and enhanced.

• **Sex-disaggregated data on user needs and access constraints:** Sex disaggregation of information is of utmost importance because of strong differentials inherent in trip patterns and purposes, the mode of transportation, the complexity of the mode used, etc. all of which have immediate economic impacts. Data on user needs and access constraints should be disaggregated according to sex, and collected through routine transport project monitoring and evaluation processes. Where data on routine measures are not gender disaggregated or not available, capacity building might be necessary. Recommended data for establishing an evaluator baseline should reflect the varied level and extent of differentiation for both men and women—travel constraints and needs; changes in travel patterns; livelihood and other opportunities created as a result of a project; the numbers of women involved in the project; consultation processes; etc.

#### h. Convergence

• **Scheme convergence:** Deeper and wider convergence between the two most

transformative schemes in rural India today – PMGSY and MGNREGA – will have multiple gender effects on the rural economy, especially in the context of expanding economic growth, human development, and social inclusion. This convergence which is formally already in place could be further enhanced by considering the inclusion of National Rural Livelihood Mission.

• **Integrated implementation:** The impact of PMGSY as well as the Total Sanitation Programme would be hugely expanded if the two are implemented in tandem. This would involve, simply put, the identification of sites for toilet blocks along the road to be constructed at the planning and also design stage itself.

#### V. Conclusion

Road connectivity and transport facilities like most other infrastructure investments are intermediate goods as against final products. Their impact thus remains an indirect one which shadows their massive contribution with respect to provision of amenities and soft-social infrastructure. This also proves to be one of the major factors contributing to their ostensible gender-neutrality. The essentiality of identifying these intermediate linkages and studying their varying impacts on the population assists in better provision of public goods and permanent assets.

The incorporation of gender differentials and women specific needs in rural road connectivity is essential to ensure that transport and other physical infrastructure facilities are equitable, affordable and that they provide access to resources and opportunities required for both growth and development. Additionally, access to social infrastructure would receive a fillip due to the enhancement and expansion of physical infrastructural facilities, such as connectivity and related issues that form the foundation. Infrastructure provision has usually been a one-way procedure dominated by technological concerns and with negligible engagement in socio-economic issues relating

to development and inclusive growth.

There is growing awareness of the urgency to provide adequate and affordable infrastructure facilities and services for low income users, especially in the rural areas and of the potentially negative social impacts of inappropriate and inadequate provision. A battery of variables, including inappropriate technological choices or regulatory standards, lack of clear ownership definitions, poor maintenance and management systems of transport routes and transport services and provision of public transport facilities that eventually benefit the better off, limit the access of the poor to infrastructure provision, many of which have particular impacts on poor women.

Gender sensitive interventions in the sphere of rural physical infrastructure should ideally focus on community based provision and involvement with special emphasis on simple, low cost technology, and user participation. There is an inherent pattern which imposes theory models for infrastructure development in rural areas, which overlook existing networks and initiatives that can be put to optimal use. A higher level of acknowledgement is needed of the diverse organisational forms involved in infrastructure services provision and management in rural communities and the various ways in which gender and other social divisions and interests such as caste, class, and ethnicity are represented in these.

Greater attention is also needed to intra-household processes and decision-making which lead to gender differences in use and control of infrastructure facilities and services. Poverty and equity concerns are also to be considered under the regulation and management of parastatal and privatised utilities and mechanisms, through, for example, health and safety controls, policy towards the informal sector, employment and training opportunities, and accountability to the rural populace.

Mainstream gender concerns have focused on the implications of women's roles in particular sectors, especially water and sanitation, where women have a predominant role. Also, there are existing social

externalities in these areas to investment through improved health and education. More recently, attention has turned to physical infrastructure and its availability in rural areas, with due recognition that a major part of low income, especially rural, women's time is spent in transportation for both domestic and income generating purposes, often without access to technologies or services which would augment this by reducing the work burden as well as time poverty. However, there is a need to review the time-saving surveys cautiously in the light of the fact that rural women have such low valuation of their own labour that access to available transport facilities remains undone. Supplementary investments that complement may be required to realise economic and social benefits that would also consequently increase the opportunity costs of labour for rural women. Other sectors and sub-sectors of infrastructure provision, e.g. water availability, drainage and sanitation facilities, would benefit from the expansion and enhancement of good connectivity.

The move towards sector investment programmes in infrastructure development underlines the need to ensure that: sectors are defined in ways which take account of women's activities and priorities; procedures for contracting out services take account of gender and social impacts; and training and employment opportunities for women are promoted, not just in low level or manual jobs, but also in technical, management, and maintenance roles. There has also been more attention on the need to incorporate stakeholders' participation in the design and implementation of physical infrastructure and service provision.

Nonetheless, the systematic inclusion of gender concerns at the policy and project levels has not yet been achieved as many infrastructure projects still not only ignore but also derecognize gender and other societal dimensions. Successful mainstreaming of gender in particularly rural infrastructure will require the removal of conceptual, institutional and physical barriers, and enhance incentives to increase the availability of, accessibility to, and affordability of all inclusive transport, growth, and developmental opportunities for women.