

Strengthening Citizen Involvement in Environment Impact Assessment

Citizen Led Environment Impact Assessment (CLEIA)



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Citizen Led Environment Impact Assessment (CLEIA)

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Executive Summary

Public participation is an essential feature of a successful democracy. Looking at it from the environmental clearance point of view, literature survey on public participation as a part of an Environmental Assessment Impact study would lead us to a unanimous conclusion – Public participation though introduced to minimize the impacts of developmental activity on the public, in reality the public *does not* fully participate due to a myriad of reasons ranging from, insufficient information, bureaucratic pressure and henceforth, and often leads to a desired fixed outcome.

Public participation though has resulted and increased public access to information, through provisions in the form of constitutional rights, laws and even certain international treaties. While this has led to easy access of all the information to the public, it has not solved the main issue of – ‘*Public Participation*’. This has resulted only in active participation of project affected families, leaving out a large section of the local population, who may neither be present nor voice their opinions. This is despite the fact and possibility that their opinions can help and provide information relevant to the project.

Herein lies the loophole both in policy and in research, where we do make provisions for easy access to information but, fail to ensure that this information will lead to a collective action [*participatory approach*] where the locals, affected or not, will actively engage with the proponents throughout the project.

Thus, there is a need for developing a participative approach for governance, which is able to enable public participation in addition to public access to information. However, there seems to be an air of caution when it comes to participatory democracy, deemed as a paradox, where though there is advancement towards including citizen engagement, there is also an opposite force of vigilance in developing more participatory policy processes; as citizen engagement usually yields very diverse and complex solutions.

With the recent upsurge of EIA projects which have not been socially accepted, citizen participation will prove to be an efficient methodology to divulge into participatory governance techniques. Merging informed public opinion with an authoritative collective decision paves way for democratic legitimacy, an approach which has been well documented but is in fact untested. Hence, there is a need for an approach creating a model for social accountability which allow social acceptance of a project simultaneously ensuring that the project proponent will have no further delays in moving ahead with his work.

Drawing upon these highlights, Citizen Led Environmental Impact Assessment Toolkit (CLEIA) an innovative toolkit is an attempt to develop a participatory interactive approach to involve local communities at various stages in the EIA process. Citizen Led Environmental Impact Assessment is designed to ensure that these citizens are empowered to effectively communicate with project proponents or clearance authorities with structured data to back

their issues with any road construction projects. The toolkit is designed in such a manner to engage and get the locals to come together, communicate among each other and reach a general consensus on the project details. The toolkit is simple, yet effectual in gathering the citizen's perception of the proposed project, and identifies mitigation strategies to reduce the impacts.

CLEIA was tested in five Indian states, Jharkhand, Karnataka, Orrisa, Rajasthan and UttraKhand. The tool was applied in conjunction with a project on the assessment of PMGSY roads undertaken by Public Affairs Centre. This book highlights on the need for a tool for enhancing public participation with in the EIA process. The book also provides a detailed outline of the toolkit and the outcomes of field-testing the toolkit on rural roads in the five study states.

Contents

Executive Summary.....	4
Background and Rationale for the Study.....	8
Participatory Governance and EIA.....	11
Social Acceptability, Social Accountability and EIA.....	13
Gaps in Research.....	16
Environmental Impact Assessment – procedure in India.....	17
Methodology.....	19
Governance and Public Involvement in EIA – Expert’s Perspective.....	22
Limitations.....	27
Citizen Led Environmental Impact Assessment Toolkit – for road projects.....	28
The Ground Plan.....	28
CLEIA - Checklist.....	30
Future Scope of Work.....	39
CLEIA – Impact Prediction Matrix.....	39
CLEIA - Scorecard.....	44
CLEIA – Monitoring Checklist.....	46
State wise Analysis –PMGSY Roads.....	48
Impact of PMGSY roads on local environment.....	49
Mitigation Measures Undertaken to reduce the effects.....	49
Jharkhand.....	51
Karnataka.....	54
Odisha.....	56
Rajasthan.....	59
Uttarakhand.....	61
Conclusion.....	64

Tables

Table 1: CLEIA - Toolkit with Checklist	30
Table 2: CLEIA - Impact Prediction Matrix	40
Table 3: CLEIA - Score Card	44
Table 4: CLEIA - Monitoring Checklist	47

Figures

Figure 1: Map of India Highlighting the States where CLEIA was tested	48
Figure 2: Impact of PMGSY Roads on Local Environment.....	49
Figure 3: Mitigation measures undertaken to overcome negative impacts.....	50
Figure 4: Benefits of PMGSY Roads as reported in Giridih and Deogarh districts, Jharkhand (Completed)	52
Figure 5: Benefits of PMGSY Roads as reported in Giridih and Deogarh districts, Jharkhand (Ongoing)	53
Figure 6: Benefits of PMGSY Roads as reported in Chikmangaluru and Vijayapura districts, Karnataka (Completed)	55
Figure 7: Benefits of PMGSY Roads as reported in Puri and Rayagada districts, Odisha (Completed)	57
Figure 8: Benefits of PMGSY Roads as reported in Puri and Rayagada districts, Odisha (Ongoing)	58
Figure 9: Benefits of PMGSY Roads as reported in Jodhpur and Bikaner districts, Rajasthan (Completed)	59
Figure 10: Benefits of PMGSY Roads as reported in Jodhpur and Bikaner districts, Rajasthan (Ongoing)	60
Figure 11: Benefits of PMGSY Roads as reported in Nainital and Tehri Gharwal districts, Uttarakhand (Completed)	62
Figure 12: Benefits of PMGSY Roads as reported in Nainital and Tehri Gharwal districts, Uttarakhand (Ongoing)	63

Background and Rationale for the Study

Public participation is an essential feature of a successful democracy. Looking at it from the environmental clearance point of view, literature survey on public participation as a part of an Environmental Assessment Impact study leads us to a unanimous conclusion. Though public participation is introduced to minimize the impacts of developmental activity on the public, in reality, the public does not fully participate. This can be due to a myriad of reasons ranging from, insufficient information, bureaucratic pressure and often leads to a desired fixed outcome.

There are various definitions for participation but the one apt for this study was put forth by France (1998), where he defined participation as *“A process of empowerment that helps to involve local people in the identification of problems, decision making and implementation, which can contribute to sustainable development”*.

Public access to information is provided in the form of constitutional rights, laws and even certain international treaties. However, widespread public access to information remain elusive, even when the constitution or an international treaty commits a country to transparency, unless there are consequent enabling laws and rules and procedures in practice (Singh and Singh, 2006). The year 1998 saw the emergence of a promising international treaty when 31 out of the 55 member states of the United Nations Economic Commission for Europe (UNECE) signed the Aarhus Convention. The Aarhus Convention, also known as, the *“Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters”*, establishes procedural obligations for policy-making, implementation, and enforcement with the aim of enhancing public participation (Rose-Kachermann & Halpapp, 2001). This treaty assumes that meaningful participation to aid decision making in developmental processes depends upon the access to environmental information and the provision to contribute to the whole process.

Transparency and public access to knowledge are two ambiguous issues often sought simultaneously. While this leads to easy access of all the information to the public, it does not solve the main problem – participation. More often than not, only the project-affected families (PAF) would active and participate in the issue, leaving out an entire chunk of the local community population who, in all likelihood may neither be present nor voice their opinions at stakeholder consultations. This is despite the fact and possibility that their opinions can help and provide information relevant to the project.

Herein lies the loophole both in policy and in research, where we do make provisions for easy access to information and often highlight this above mentioned issue. However, we need to ensure that this information will lead to a collective action [*participatory approach*]

where the locals, affected or not, will actively engage with the proponents throughout the project.

India has seen numerous violations of the Public Consultation clause in the Environmental Impact Assessment Notification. The reviewed notification of 2006 also fails to strengthen this section. Fortunately, off late the premier financial institutions have recognized the importance of environmental and social safeguards and have put forth requirements which are often more stringent than our country's legal notification. As a leading financial institute providing loans for developmental projects, the World Bank has developed rigorous Environmental Assessment instructions. These instructions cover the issues and requirements of local people in the proposed project area, and also direct the proponent to engage actively with these local groups right from the point of conception till the completion of the project.

The World Bank has a meticulous directive on Public Involvement in Environmental Assessment that requires consultation with affected groups and local NGOs during at least two stages of the EIA process. This is usually shortly after the EIA category has been assigned, and once a draft EIA has been prepared. In projects with major social components, especially those requiring involuntary resettlement, consultation on social issues and on EIA need to be linked.

EIA, as a legal document in the Constitution, has often been questioned for its need to be transparent in all the proceedings and factors in accountability (the project proponents are held accountable by the assessment authorities or the Ministry of Environment and Forestry for all the information they have provided, but never by the public). It is highly probable that this concept is publicized by consulting agencies or bureaucrats who would benefit from the project. However, it has been quite a revelation to see studies of not just industrial experts but also academicians who do not understand the necessity for a developmental project to have such a high level of transparency at each stratum. Moleworth (1985) said that proponents argue that only those with sound scientific/technical training can contribute to the constructive decision making.

This school of thought has been frequently proven wrong by indigenous communities who work together with the project proponents to develop a design based on local knowledge. The knowledge the communities possess about the resource pools in the region, the geography and vulnerable areas or alternative sites – information which could help put the scientific data or the trends noted in the region into perspective. For example, in Ecuador after an extensive and active public participation the proponent was persuaded to alter the project design right at the project proposal phase, once the locals noticed that the initial plan would damage the local wetlands and mangroves and put forth a valid argument which finally convinced the proponent to opt for a more expensive but, environmentally safer alternative. Similarly, as a participatory post clearance monitoring approach at the Dahanu Thermal Power Plant in Maharashtra, India, the local NGOs' were given the job to monitor

the atmospheric emissions and the impacts it had on various groups, these NGO's engaged the locals to work with them. (World Bank, 1994)

Prof. Abdul Ghani (2004) noted that the responses were poor even when the public were invited to participate. Usually when the projects are to be cleared in rural areas – exploiting the flourishing natural resources in the region, the locals do not have a structured manner to put forth their argument and most of the times, they have only limited opportunities to comment or make recommendations at the public hearing, a single unanimous voice is not heard at the consultation, unless they are backed by an NGO or other civil societies.

In their study Tedford-Gold (2005) note that Public participation is an extremely context driven, socio-political process; however, in this study we try to work towards a less context driven and more of a collective action process. We are of the opinion that if significant resources are provided to design structured participatory method – we can develop a working participatory model. Such a model would be designed to generate citizen dialogues to bring forth an informed opinion and a shared public view on the project at hand.

Despite the level of awareness about the importance of public engagement in EIA, there are very few specifications/methods used to establish the local's perspective. The lacunae in the research conducted and the need to consider the consequences of a participatory approach in EIA, led to the development of Citizen Led Environmental Impact Assessment (CLEIA), the idea and concept of which was conceived at the Public Affairs Centre, Bangalore.

The objectives of this study are –

- To identify key areas to introduce/enhance public participation in the EIA paradigm
- To develop a toolkit that facilitates citizen participation at all stages of the EIA procedure
- To empower the local communities to engage with stakeholders in participatory environmental governance

Researchers such as Burningham (1995), Dale and Lane (1994) have accused the process of EIA as being too 'technocratic' in orientation and not taking into consideration impact on people, – alternatively the CLEIA study is an attempt to include a participatory social aspect into EIA by using simple tools to ensure that people are provided with a platform to voice their considerations about the proposed project.

Participatory Governance and EIA

“There is ... an emerging service delivery model involving governments working in partnerships with communities to determine the need, and devising strategies for meeting these needs, implementing activities consistent with these strategies and ultimately monitoring results. The emphasis is on community empowerment and not on traditional functional program delivery”

- Peter Douglas Beattie
(Former Premier, Queensland, Australia)

Lately, participatory governance has seen a significant reappearance in our socio-political dominion, owing to the inherent and interdependent relationship between civil societies and state institution. Although this relation is commonplace in a democratic country, yet it remains mainly in the theoretical realm and is yet to actually reach the implementation state. Environmental stakeholders are now grabbing the institutional and legislative support they are entitled to. Academically, there has been a continuous development of noteworthy literature providing different approaches and innovative ideas to develop a workable citizen engaged model to complement the policies, most of which have also highlighted the need for such advancement.

A participatory governance approach is ideal for sustaining public access to information and incorporating public participation into the decision making process making an ideal utopian scenario, American politician Davis (2001), notes that modern day politics no longer accommodates representative participation efficiently. This is due to availability of new methodologies and approaches to develop a form of participatory governance, which involves all citizens, affected or not. Ideally community voices need to be strengthened by sharpening their skills and capacities to utilize their knowledge and participate in a structured dialogue because the traditional and centrally managed community consultation no longer remains an adequate means of citizen participation.

It would be misleading to say that the entire policy framework is undergoing a change to incorporate a more active citizen engagement approach. According to studies conducted by OCED (2001), local ideas are often innovative and given time, they prove to be efficient and hold the potential to inform policies at the national level. However, there seems to be an air of caution when it comes to participatory democracy, deemed as a paradox, where though there is advancement towards including citizen engagement, there is also an opposite force of vigilance in developing more participatory policy processes; as citizen engagement usually yields very diverse and complex solutions (Leach et al 2000).

Reddel (2003) cited the limited scale and capacity of such an initiative and the power differentials observed in society – reason to be one of the drawbacks of citizen engagement.

Extracting innovative ideas from citizens to merge in the decision making procedure cannot be differentiated from the realities of our legal system, however the components of governance namely, transparency, efficiency, accountability and participation; are all included in our EIA legal framework as the bottom-up participatory mechanism. A mechanism to form representative communities in an area of study can be termed as a form of formal citizen engagement strategy (Walsh and Butler, 2001). This differentiation into representative groups and the legitimacy of the information gained in the process has often been questioned by researchers. Therein remains the critical challenge in the struggle to enhance community engagement in decision-making process.

Lack of education and technical know-how has withheld citizens from being a part of consultations. But this is not the case with certain sections of the society (representative groups) who can well articulate and influence the [*supposed*] consensual 'voice' of citizens. However, these points are put forth in conditions of chaos, doubt, unpredictability and almost always, ignorance. It is exceedingly important to facilitate citizen participation at negotiating tables and encourage them to hold structured dialogues.

With the recent upsurge of EIA projects, which have not been socially accepted, citizen participation will prove to be an efficient methodology to divulge into participatory governance techniques. Merging informed public opinion with an authoritative collective decision paves way for democratic legitimacy, an approach which has been well documented but is in fact untested. .

Social Acceptability, Social Accountability and EIA

Public Participation in project preparation beyond public consultation is not an EIA requirement, but, it would strengthen local ownership and accountability.

In the context of our study, Social Accountability could be crudely defined as an obligation to provide answers to the citizens and provide the necessary evidence to show how certain outputs have been achieved. Fabiana Li (2009) mentions that the principle of social accountability has already been incorporated into the process of EIA – the form of documents produced and the mandatory process of making them public. This entire design can render the proponent to be held accountable, even *legally* to the information he/she has provided. The presence of the mandatory six month compliance report which needs to be sent after granting a clearance should have instilled a high level of honest self-reporting mechanisms (answerable to the government); however there are numerous cases which prove otherwise.

A vital variable required for social accountability apart from active participation by the locals is, *transparency*. Constituencies cannot make informed decisions in demanding accountability without transparency (Blair, 2008). In India, the legal system guarantees freedom of speech and an inquiry into matters pertaining to the public in the form of Public Interest Litigations, this often proves handy when it comes to any significant undisclosed information. Usually the role of filing a PIL to unearth the hidden information is undertaken by Civil Society Organizations – who publicize the findings and force the Government to hold the project proponents accountable. In many instances CSO's have helped the locals hold the State or a private enterprise accountable for a particular project.

In India an active citizenry will maintain and aid in lowering the current rate of environmental degradation. The following examples illustrate how citizens need not carry the load of accountability on their own; they could initiate it, gather evidence in a structured manner which would impose the municipal authorities or the State to carry out the work they are required to by law.

The Vedanta Controversy

Vedanta's project to mine bauxite on the forested hills of Niyamgiri in the state of Odish - a site considered sacred by the indigenous Dongira Kondh tribe was rejected by the Indian government. The then Environment and Forestry Minister, Jairam Ramesh, in what was unanimously agreed as a well acclaimed move, held the UK giant accountable for not conforming to the forest conservation, tribal and environmental laws in Orissa. Not obtaining the consent, as required in of the legal domain, from the tribals cost Vedanta the project. The plight of the tribals who inhabited the upper areas of the Niyamgiri Hills received national and international media coverage – The tribals managed to draw attention to this issue and thereby is an ideal example of how *citizens can be effectual in guiding the execution* of already existing laws.

The Nirma Example

Another apt example of how active citizenry has led the Government to take notice of the violations and the degradations caused by huge enterprises was the Nirma case in Gujarat. Peaceful, non-violent protests by the villagers in the State led to the Centre revoking the clearance granted to Nirma, the detergent company which had proposed the development of a cement plant in the wetland regions of the State. The project was spoofed as “Nirma whitewash” after the detergent giant had deliberately withheld information about the wetlands and had instead deemed it to be wastelands; only after the locals protested at the Public Hearing did the Centre take notice of this violation and revoked the previously granted clearance (Juneja, 2012).

At the peak of this peaceful rally, the then Union Minister of State for Environment and Forestry, Jairam Ramesh urged the people to *“build pressure from the ground”* on the government so that necessary action is taken to protect their environment. (Desai, 2011)

These are just two cases to demonstrate how project proponents can be held accountable when agitating locals try to bring light on the violations caused by such projects. Active participation by the locals led to holding the proponents accountable, even though the locals just initiated the chain of events. People have aided in demanding the Executive wing of the government to hold violators accountable as mentioned under the Law.

A common school of thought in case of public consultations in EIA is to assume that local opposition to a project can be overcome by the rational decisions made by the experts and, people will eventually get used to it. However, Batongbacal (2008) in his research paper notes that society should not be viewed as a monolithic and pyramidal social organization, but as a fluid, dynamic network of institutions with varying levels of autonomy. This would result in social acceptability, which will be produced not by a hierarchy based regulatory mechanism, but by direct interaction between the competing social factors and institutions.

To achieve community stability along with industrial/economic stability, any form of development needs effective management. For a given project, adopting a plan of action which is interactive and participatory ideally calls for involvement of all the local stakeholders, at various stages. A complete social assessment is neither a structurally or functionally complex issue though; it might turn out to be expensive from the proponents’ point of view. When weighed alongside local retribution the project faces, it is but a minor trade off which could lead to greater social acceptability of the project.

Harry Blair (2008) a Political Science lecturer at Harvard University says that *“participation is the flipside of accountability”*, they are not mutually exclusive. He also mentions that accountability is one of the key concepts in crafting effective environmental protection and the necessity to promote citizens or people to be directly involved in the process and not

the elites. This will enable the citizens to demand accountability [some] from policy makers amidst the vested interest of others.

Participatory mechanisms, when implemented, ensure that the public too takes up some responsibility, when they are actively involved. Participation at any stage becomes a form of *shared responsibility* as citizens; NGO's or state institutions are incorporated into the monitoring or management aspect of the project (Fabiana Li, 2009). The participatory nature of EIA is part of the larger efforts to ensure that a project moves on steadily without any form of impediment from locals, unfortunately participation and democracy can only be learnt through practice.

In the Philippines', social acceptability is one of the primary factors to be considered as a part of the Environmental Clearance process. The Malampaya Project, conceived in 1989 is one of the most suitable examples to illustrate how this mega project, which covered three provinces, two cities, fourteen municipalities and many villages was accepted by all the communities. World Resource Institute (WRI), in one of their research studies '*Development without Conflict: The Business case for Community Consent*', presented the Malampaya Project as the only case study where prior public approval was successfully integrated into decision making with results in terms of cost and sustainability.

The Malampaya project example

In 1989, a large off shore natural gas reservoir was discovered in Philippines, the Malampaya project comprised of nine undersea wells, connected by an undersea manifold to a production platform nearly 50 kilometers from the nearest shore. The 504 kilometer pipeline would take gas through two different inland provinces and to an onshore natural gas processing plant in another province. The project proponents, the Royal Dutch Shell and Occidental Petroleum (Oxy-Shell) understanding the gravity of social acceptance for this massive project to sail smoothly, chalked out a meticulous, participatory public participation strategy, which is now cited as a case study in numerous research papers. The EIA study included an extensive social assessment component which included seven scoping workshops, nine public consultation/validation session, five focus group discussions, separate presentations to municipal legislative councils and provincial legislative councils and the proponents even conducted Public information, education and communication (IEC) campaign.

All these efforts were made to ensure that the public accepted the project so that the proponents did not have to face any delays. The prime contractor of the project, Royal Dutch noted that the numerous, informal discussions held **before** the EIA process helped in making changes in the project design which led to the pipeline to be located off shore, as against the original plan was to have it on shore, passing through the island of Minoro. This was undertaken even though the cost of off shore pipe lying was three times than that of onshore. The project proponents accepted that the scoping and validation sessions were

highly significant in acquiring the trust of the local communities as issues such as livelihood and other concerns were addressed and suitable reforms were made by the next consultation sessions.

Gaps in Research

The principle of both Social acceptability and social accountability involves the common aspect of utilization of local knowledge to facilitate the process of impact assessment. This can be achieved by active public participation. All studies conducted so far have a unanimous concluding remark where they infer that social accountability is a principle, which is imprinted into our legal systems – but the implementation of this key aspect of our legal paradigm is where we fall short. EIA serves as a self-regulatory system that contributes to state legitimacy while limiting the regulatory responsibilities of its institutions (Szablowski 2007). As communities are called upon to keep a check on ‘their’ natural resources, it becomes their responsibility too. However, in India, a participatory democracy is not often observed, efforts to ensure legitimate development in an area, one which is accepted and considered to be an asset for the communities is a grey area.

Not only does an approach to create a model for social accountability allow social acceptance of a project but, it will also ensure that the project proponent will have no further delays in moving ahead with his work. This is a small trade off the proponent should be willing to accept for their own good will.

Environmental Impact Assessment – procedure in India

“The environmental impact assessment (EIA) process is an interdisciplinary and multistep procedure to ensure that environmental considerations are included in decisions regarding projects that may impact the environment”. ((ELAW), 2010)

The main purpose of conducting an EIA is to inform the decision makers and the general public about the potentially significant environmental effects and risks associated with developmental projects. This tool not only helps in predicting and identifying the environmental impacts but also promotes transparency and public involvement. Following an EIA the recommendations of the report are to be considered by the project proponents by redesigning a particular activity or identifying alternative options.

The EIA process consists of the following steps:

Project Proposal – All proponents undertaking activities listed in the EIA Notification should notify the Impact Assessment Authority and fill out the Form 1/1A providing the necessary details of the project.

1. **Screening** – The new notification categorizes projects into two categories, A and B based on the spatial extent of the impacts, effects on human health and the effects on the environment.

Category A projects are looked into by the Central Government and Category B Projects go to the State Government. Category B projects are further sub divided into Category B1 and Category B2, the former which do require an EIA and public consultation and the latter which don't.

2. **Scoping** – This is the process where the expert appraisal committees determine detailed Terms of Reference (TOR) addressing pertinent environmental concerns for the preparation of an EIA report with respect to the project.

The TOR will be formulated on the basis of the information provided by the proponent in Form 1/1A of the notification and that is developed by the proponent themselves.

The TOR is expected to be conveyed to the proponent by the appraisal committees within 60 days failing which the TOR recommended by the proponent will be taken into consideration.

Once the TOR is set, the proponent prepares the Environment Impact Assessment report.

3. **Public Consultation** – In this the process concerns of the locally affected people are heard at a public hearing conducted by the proponent, under the supervision of the State Pollution Control Board. The hearing is usually conducted at a close proximity to the project site and suggestions of the locals are taken in writing at the end of the

hearing. The proponent takes these suggestions into consideration and makes changes in the draft EIA.

4. Appraisal – This process entails the detailed scrutiny of the project, the EIA report and the outcome of public consultation. These proceedings include a transparent interaction between the appraisal committees and the proponent. In the end, the committee gives its recommendations to the regulatory authority as to either grant an environmental clearance with stipulated conditions or reject the same giving reasons.
5. Monitoring post clearance – It is mandatory for the project proponents to submit half yearly compliance report indicating their adherence to the conditions specified when granting clearance.

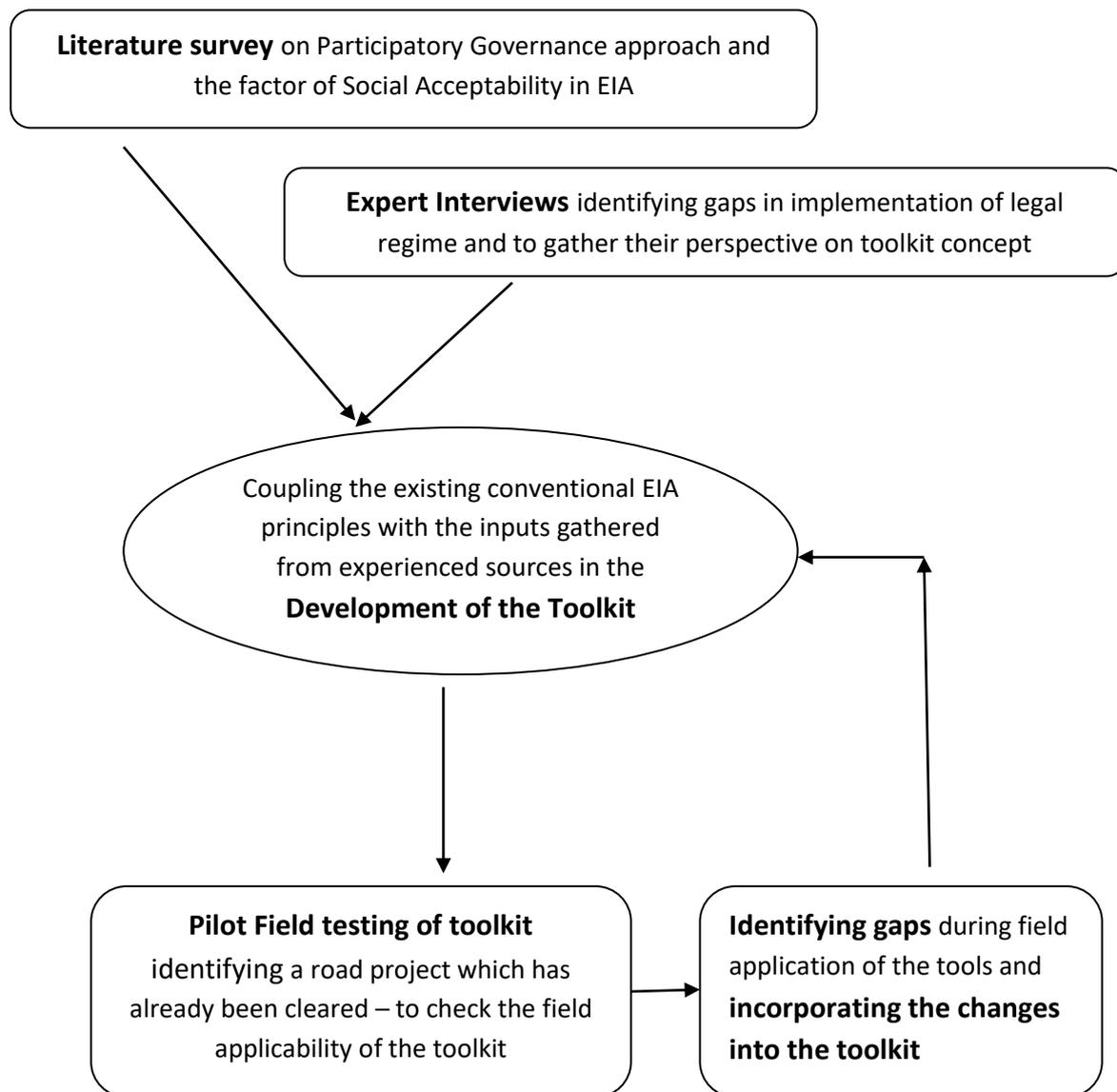
BENEFITS OF THE EIA PROCESS

- Potentially screens out environmentally-unsound projects
- Proposes modified designs to reduce environmental impacts
- Identifies feasible alternatives
- Predicts significant adverse impacts
- Identifies mitigation measures to reduce, offset, or eliminate major impacts
- Engages and informs potentially affected communities and individuals
- Influences decision-making and the development of terms and conditions

(ELAW, 2010)

Methodology

As stated in the objectives, the study is conducted with a primary focus to achieve participatory governance in the EIA paradigm. Interviews and online surveys were conducted with experts to gather their inputs on public participation and the concept note of the study. A toolkit was developed to ensure active participation by majority of the population located in the project proposed area, and, to ensure this toolkit is utilized at the right time; the study identified areas in the EIA process where public participation can be introduced or enhanced.



Activity 1

To attain the first objective, i.e. to identify the areas in the EIA process to enhance public participation (by utilizing the toolkit), extensive literature review was carried out to analyze the existing theoretical concepts and to identify the existing methodologies of a

participatory governance approach. In-house discussions – within the Environmental Governance group at Public Affairs Centre, was held often to construct an entire frame of the EIA procedure highlighting areas where public participation was to be complemented with the data generated from pilot testing the toolkit.

Simultaneously, interviews and online questionnaire surveys were conducted to gather the opinions of consultants, academicians and experts who work on public participation as a tool for policy advocacy. Open-ended questionnaires were developed and circulated among the experts to be interviewed, who were chosen by stratified sampling. The experts identified were from different backgrounds such as academia, private consultancy firms and activists. The sample size of 12 was initially agreed upon but, it was reduced to 6, as only six of them responded.

The questionnaire was developed to gather how different groups of experts – each of them with a relevant bearing on the issue of public participation – interpret public participation and to gather their views on using toolkit to develop a participatory working model.

Activity 2

The toolkit was designed in such a manner that it adopts from the existing literature on participatory approach and integrates with information present from projects that have adopted similar approaches within their study methodologies. Drawing from conventional impact prediction models such as the *Leopold's Matrix to Damman et al's Seven Step Frameworks* socio-scientific approach, basic principles from these models were simplified in designing out tools.

Once the draft toolkit was ready it was circulated amongst the Environment Governance Group at PAC and subsequently, changes were made. The approved toolkit from PAC was circulated among field experts to gather their opinion and understand the feasibility of the toolkit. Field experts considered here were environmental consultants –who had previous experience of road construction projects; and activists –who had often raised the issue of improvising public participation in EIA.

Activity 3

The toolkit was validated, i.e. verified to see if it does generate the data that it is meant to, therefore an already completed road project was chosen in Bangalore rural district. A Preliminary reconnaissance survey was carried out. The organisation which carried out the implementation of the Resettlement Action Plan was identified. Discussions with the organization and its people involved with this particular project helped to gain a clear picture of the selected road project and to gather any secondary data, which was available. Furthermore, contact details of affected people and families were gathered.

Subsequent visits were made to choose the sample area to test CLEIA toolkit. The village of Nandagudi, one of the primary villages in the area was chosen. The village was also the site where the stakeholder consultation was previously conducted. . The project affected people and families chose to gather at Panchayat office in this village. Implementing the Cluster Sampling Method, Focus Group Discussions was held with the local residents and the Panchayat members and accordingly the toolkit was utilized to gather and generate as much information as possible. Subsequently, data generated from the toolkit was compared with the information provided in the EIA report.

Activity 4

Based on the disparities observed when utilizing the tools accordingly, further changes were incorporated into the toolkit to facilitate efficient usage.

Governance and Public Involvement in EIA – Expert’s Perspective

One of the most apparent drawbacks of Arnstein’s ladder of Citizens Participation (Arnstein 1969) is that he assumes that it is always better to move towards complete citizen control. Arnstein does not take into consideration how citizen participation could be achieved if these citizens do not have the required support and knowledge to understand all aspects of a project and its implications.

The ability of a community to engage with the project proponent and the state is an issue that has to be addressed primarily. This is also a prominent argument the consultants and/or project proponents often put forth. As Danake (1983) has noted *‘Most researchers agree that it is not the purpose of public involvement to make the decision, but rather to merely improve decision making’*. The question that arises is whether the information and/or input generated from the public does actually improve decision making or is it just a mandatory procedure to be followed to attain clearance for the project. Keeping this in mind, as a part of toolkit development we conducted a series of interviews with people who are recognized as experts in the field to understand their stand on Public Participation as a policy tool. The interviews focused on the utilization of social accountability tools to enhance the quality of Public consultation, and also helped gather what experts had to say about the use of social accountability tools before we plunged into the development of the toolkit.

In the context of our study we would define experts as *people who have had privileged access to communities and decision making processes* in the milieu of EIA. These experts have often contributed to social debates on this matter; therefore it was decided that opting for a tête-à-tête with experts would yield information which is biased. Hence, the experts were classified into

- Consultants – those who possess technical knowledge and can provide us with the details of operations on fields
- Activists – those who have specific information of interactions, processes, routines on projects
- Academicians – those who possess explanatory knowledge and have often interpreted rules and regulations to illustrate their work

The questionnaire was built around the three pillars of Aarhus’s Convention which are access to information; participation in planning and decision-making and lastly access to justice. The questionnaire included ten questions, which touched upon on issues such as effective public participation, citizen’s skepticism in administrative decision-making, decision maker’s justifying their choices, making the justification process mandatory and project proponent’s take on this. Additionally, the team tried to gather people’s opinion on the controversial argument of the technicality of EIA and the general publics’ inability to

comprehend the process and weather projects belonging to either private and/or public sector included a stringent public participation program. Finally, the team attempted to identify methods to enhance the public participation in the consultation process and requested for their [*expert*] opinion on using tools to conduct an efficient and productive consultation process.

Initially as a part of this study we were supposed to interview twelve experts, however, we were able to get through to only fifty percent of the initial number. The following are the names and occupation of the experts:

- **Ms. Aarthi Sridhar** – Head, Environment and Law program at Dakshin Organization. She has previously held the position of the Regional Coordinator, Central India Ocean, and IUCN-World Commission on Protected areas.
- **Mr. George Thomas** – Environmental Consultant, KRS Enterprises, Bangalore
- **Ms. Sabitha Acharya** – Environmental Consultant
- **Mr. Siddhartha Baruah** –Trainee at IIRS, Dehradun. Has previously worked as a consultant at Asian Consulting Agency, Delhi.
- **Mr. Srikumar** – Director of projects at the Centre for Symbiosis of Technology, Environment and Management, Bangalore
- **Mr. Frank Vanclay** – Professor and Head of the Department of Cultural Geography in the Faculty of Spatial Sciences at the University of Groningen in The Netherlands

Defining effective public participation

When asked to define ‘effective’ public participation (EPP), the academicians and activists believed that participation with proper understanding of the project and appreciation of the end result would indeed lead to effective participation. Moving beyond the mechanism of eliciting diverse views effective public participation would be one where “a wide cross section of what constitutes a ‘public’ in a given instance is able to *articulate an informed position* regarding a particular idea, proposal or event” as mentioned by Ms. Aarthi Shridhar. Professor Vanclay on the other hand indicates that there are varying degrees of participation, from a unidirectional informal meeting to consultations to interactive participation – moving from the least to the most effective method.

It is interesting to note that despite the usual skepticism surrounding consultants, both Ms. Sabitha and Mr. Srikumar agree that the output of an effective public participation should yield the people’s perspective of all the impacts they face. They highlight that, it is the duty of consultants to ensure they convince people of the mitigation measures that are planned or incorporate public inputs into altering some facets of the project.

Citizens and Administrative decision making

Assuming role reversal here, the activists believe that the citizens have not lost their trust in the decision making bodies, just yet. Conversely, consultants actually believe that in project affected areas, the interested groups are swayed by the local political settings and may often work towards a decision which might not go down too well with the general public. Professor Vanclay notes that in a democratic setting irrespective of the loss of trust the people need to be involved in the decision making procedures either way. While Mr. Thomas, Mr. Baruah and Ms. Shridhar concentrate on a subject matter which is highly relevant i.e., level of literacy. They indicate, with high level of illiteracy, the locals very often depend upon an external body to guide them through these procedures, being unaware of it themselves. While Ms. Shridhar and Mr. Baruah congratulate the Civil Society Organizations for having played an extremely successful role in certain cases, Mr. Thomas warns of activists with overzealous passion leading the community to have a standoff with the higher order.

Justifying the Decisions

Trying to get the authorities to justify the decisions they have made is an issue where all the respondents had a unanimous opinion. It is unlikely that the administration would share the reason or the information behind their decision-making procedure. This would denote the sharing of power with the citizens, instead of opting for this course of action the respondents suggest, or rather welcome people to appreciate and rightly utilize their right to information and explanation, even though it is often invoked after a decision has been made. If however, the justification process was made mandatory then as Ms. Sridhar said *"It would move us one step closer to understanding the political compulsions that have driven specific decisions and it would be better governance if there is transparency at this level"*. All of the respondents agreed that if this feat is achieved someday then, it is also the responsibility of communities to accept the logical decisions made.

When executing a project which would ensure the development of a community the authorities frequently encounters opposition from the communities, this happens as these communities are very rigid in their ideas and beliefs. It is at times like these that questioning the logical and technical reasoning of the authorities would appear antithetical to the reason of a State.

Public Participation and Project Proponents

Participation and the numerous suggestions and aspects proposed by the proponents need to be addressed through a consultative process is often viewed as a waste of time, especially taking away the profit margins into consideration. Mr. Baruah pointed out that *'to protest against anything new is inherent in human beings'* and this usually leads to a delay in the implementation of different aspects of the project. Ms. Sabitha noted that it should

suffice to provide the public with information on a *need to know* basis, if in any situation a particular section of the public demands for more information the consulting agency is liable to provide the information. This is the usual protocol according to the legal document of India and it is almost always followed. Mr. Baruah and Mr. Srikumar stressed upon the fact that it is important for us to understand that the protests by the public sometimes are staged by local political parties and this is something that has to be duly addressed.

Overcoming the Technical aspect of EIA

Consultants quoted that EIA is primarily a technical paradigm which the average citizens cannot comprehend. Mr. Srikumar opined that the consultant is qualified to conduct an EIA study and fully understands the procedure. He listed down the risks associated with incorporating everything the general public suggests into the project design. He notes that there are phases in the project implementation where changes can be made, but there are also times when a particular activity is beyond the level of understanding of the community as a whole. However, any feature/design which can be simplified for the public is often done so. Ms. Sabitha described the methods she has conducted or been aware of; she added that it is a good idea to push the project in a new area after presenting a similar project, which has been successfully running in a different area. She further mentioned that in times of conflicts creating interactions between communities living alongside a similar project would be recommended.

Ms. Shridhar noted that the issue of Science and Technology in general creates the experts we know and isolates them from the public. He highlighted the need for an efficient communication system in order for the public to accept it or even appreciate these technologies or scientific progress.

Expert suggestions to enhance Public Participation

In our country, today there is reluctance to stop investment and development on environmental grounds, exposing the rampant corruption or the illegal clearances has led to the Ministry taking some action in the past. The activists do believe that it is necessary for CSOs to resume their role of being watchdogs with rigidity. Professor Vanclay says that proponents and consultants need to understand that a project apart from being business for them is also invasion into a community's life; nobody likes a highway passing through their backyard. The importance of the need to educate or hold awareness programs for these communities has to be accepted, and quickly. The consultants propose a clause, which states that without minimum participation from the public the project shall not go ahead but, has been violated in the past.

Utilization of tools such as Checklists, Matrices and Questionnaires to conduct a successful Public Consultation

Professor Vanclay stated that these initiatives will not matter unless there is complete participation from all sections of the community. He says that gathering significant data, which would be withheld at the consultation, will happen only if everyone has a chance to voice their opinion out, only after understanding the implications of any project activity. Ms Sridhar also advised to proceed with caution, and said *“what can be doctored will be doctored”* and added that if such tools are developed it should be kept in mind that it should generate output which would *“strengthen the positions of the local communities in highlighting their positions in regards to the project”*. Mr. Baruah also mentioned that if these tools are developed then, it should lead to a flexible system, which can change according to the target group. All the respondents agreed that it was an experimental initiative and specifications should be taken into account, however, all of them ended with a cautious note on choosing the right target group to utilize these tools, failing which there could be a possibility of manipulation and distortion of facts.

Key points highlighted during the interviews
<ul style="list-style-type: none">• Educate the locals before empowering• Train the core group to utilize the toolkit• Introduce the local residents to similar projects or possibly arrange for interactions with communities where similar projects have been implemented• Maneuver around the political scene in the area while choosing the core team• Appreciate the technical training of consultants

Limitations

The primary limitation of this study is the customization of the toolkit. The toolkit developed is valid only for road projects, designing a methodology which is universally applicable to all developmental projects cannot be attempted only from existing literature. Trial and error studies need to be undertaken to understand the different aspects of any developmental projects on the environment to gain in-depth experiences; unfortunately, this could not be achieved in the allotted time frame.

While empowering the citizens we pass on to them an iota of power, the identification of the core group, which conducts the study in the area, is a crucial phase of the study. Literature reveals that the inability to exercise a participatory democracy in the realm of EIA often arises due to a select few, who have the ability to articulate easily and are politically conscious. Once the toolkit is passed on to a local CSO or a youth group, it is within their control to implement it justly, the need for the guidance from any outside group will be a disadvantage if they have a vested interest in the project. However, it is a significant requirement for the toolkit and poses to be a paradoxical situation.

Citizen Led Environmental Impact Assessment Toolkit – for road projects

“It is one thing to develop measurement tools that are valid and reliable... but they also have to be easy to use”

(Rowe and Frewer, 2004)

Social analysis is an important aspect of any developmental project but, there is a lack of appropriate techniques required for thorough understanding and implementation of this factor. As highlighted in the expert’s interviews, attempts to improve community participation in developmental projects are hampered by poor information and lack of education. Drawing upon these highlights, Citizen Led Environmental Impact Assessment Toolkit (CLEIA) toolkit is an attempt to develop a participatory interactive approach to involve locals at various stages in the EIA process and to ensure that the people are the focal points in our approach to empower them to conduct a survey, which can highlight their grievances.

Issues with a project are best handled with effective participation from the citizens of the project proposed area, at a relevant level. Citizen Led Environmental Impact Assessment is designed to ensure that these citizens are empowered to effectively communicate with project proponents or clearance authorities with structured data to back their issues with any road project.

The toolkit is designed in such a manner to engage and get the locals to come together, communicate among each other and reach a consensus on the project details. Our aim was to keep it simple, yet effectual in gathering the citizen’s perception of the proposed project, the impacts it could pose and the mitigation strategies to keep in check the impacts.

The Ground Plan

This toolkit is developed to be utilized by the citizens residing in the proposed project area with guidance from a Civil Society Organization. The key steps for the utilization of this toolkit are:

- Identification of a CSO based in the vicinity of the proposed project area
- Identifying the youth groups, women welfare groups, self-help groups and the Panchayat members in the proposed area and forming a core group with individuals representing different groups to form the core team
- Training the core team to utilize the toolkit
- Utilization of toolkit by the core team
- Compilation of the information gathered by the core team after using the toolkit and presenting it at the Public Consultation

The main objective here is to ensure that not just a section of the society, but all the

representatives from a community participate and contribute to the gathering of the data, to interpret the information generated by the toolkit and eventually utilize this information in a constructive manner. The selection of the core team has to be done cautiously as “a select few are often patronized to articulate the findings”. Citizens from different backgrounds will be better representatives of the opinions of how the communities feel about the project. Following this protocol will not only boost the morale of the core team selected but, also the other citizens who place confidence in their own people. This will allow the communities to accept the project and the proponents will not have to face any delays due to public retribution/incorporation.

An effective scenario for applying CLEIA would be at the beginning of the project and would need the application of the following stages

Stage 1 – The Terms of Reference set by the authoritative body is based on the information provided by the project proponent in form 1A. The ToR's are the boundaries, which the authorities set to contain the proponent's proposed activities.

We can involve the communities at this stage to formulate data based on the local knowledge they possess. This would be done to see whether all the necessary points are mentioned in the original ToR and as a form of an accountability to check if all the information provided by the proponent in the form 1A is true.

Stage 2 – Once the locals are aware of the project and the boundaries set in the ToR, they can predict the implications of the project on the surrounding environment, with respect to the project activities, based on the past their knowledge of the natural resources and issues related to them in that area.

Stage 3 – At the Public Consultation, a scorecard to show the level of satisfaction of the community to the mitigation measures mentioned in the report (which would be made available to the public) .Since the communities are equipped with the prediction report they formed, they can bring to the notice of the clearance authorities and the proponent the implications they have missed and the crucial impacts which would require efficient mitigation measures.

Stage 4 – Once the clearance is granted, a monitoring checklist which would allow the citizens to hold the proponents accountable if they have not been carrying out the mitigation measures as initially proposed and approved.

CLEIA - Checklist

This tool is a scoping checklist developed to help the users check if all the necessary and significant impact causing issues as mentioned in the Environment and Social Management Framework of the PMGSY roads and are duly addressed in the Terms of Reference put forth by the project proponent.

It is a simple tool derived from the activities mentioned during road construction. The questionnaire is classified into ten sections A – K.

Section A covers the Geographic profile of the villages where the roads are located

Section B indicates the demographic profile of the villages which are connected by the road

Sections C, D, E, F, G, H, I comprise of questions on vegetation, land, water, livelihood, drinking water, other resources, and ecology

Section J focuses on the benefits provided by the PMGSY road

Table 1: CLEIA - Toolkit with Checklist

A. Geographic Profile:

1	State:		
2	District:		
3	Taluk:		
4	Panchayat:		
5	Village:		
6	Soil type:	Alluvial	1
		Red loamy	2
		Sandy	3
		Black	4
		Other.....	
7	Name of the road	

8	PMGSY road length	Length.....	
9	Distance of the village from State or National Highways:km	
10	Elevation of the road from mean sea level:	
11	Prone to any of the natural disasters:	Earthquake	1
		Landslides	2
		Cyclones	3
		Other.....	

B. Demographic profile:

1	Population connected by the road/	Population.....	
2	No. of household covered	No.s.....	
3	Major livelihoods:	Agriculture	1
		Livestock	2
		Horticulture	3
		Minor forest produce collection	4
		Other.....	

C. Vegetation:

1	Whether any existing trees are cut?	Yes	1	
		No	2	
2	Specify the species name and its use	a. Name of the species.....		
		b. Uses.....		

			
3	What is the average age of the trees?		
4	Whether tree plantation measures are taken?	Yes	1	
		No	2	
5	If yes, how many trees and what species	Total no. of trees.....	1	
		Tamarind tree	2	
		Pongamia pinnate	3	
		Silver oak	4	
		Mango tree	5	
		Neem tree	6	
		Eucalyptus	7	
		Other.....		

D. Land

1	What is the terrain	Plain	1	
		Mountainous	2	
		Steep	3	
		Others.....		
2	Is there a chance of soil erosion?	Yes	1	
		No	2	F- Q.1
3	If Yes, Is this erosion	Restricted to clearance area	1	

		Does it go beyond	2	
		Both area	3	
4	Whether this erosion is likely to affect agriculture?	Yes	1	
		No	2 → F-Q.1	
5	If Yes, No. of farmers getting affected	Farmers with less than 1 acres	Numbers.....	1
		Farmers with less than 2.5 acres	Numbers.....	2
		Farmers with less than 10 acres	Numbers.....	3
		Farmers with more than 11 acres	Numbers.....	4
6	What ways agriculture got affected?	Loss crop		1
		Loss of soil fertility		2
		Formation of rill/ravine		3
		Destruction of bunds		4
		Other.....		
7	Whether any mitigation measures are taken?	Yes	1	
		No	2 → F-Q.1	

8	If yes, what are the measures?	Compensation	1	
		Support for improving soil fertility	2	
		Support for control of rill/ravine	3	
		Support for construction of bunds	4	
		Other.....		

E. Water

1	Did road construction affect any existing water bodies?	Yes	1	
		No	2	→F- Q.6
2	If Yes, which are the water sources?	Tank	1	
		Stream	2	
		Nalla	3	
		Pond	4	
		Common well	5	
		Other.....		
3	Does it affect drinking water sources?	Yes	1	
		No	2	→F- Q.6
4	If Yes, which are those drinking water sources?	Tank	1	
		Stream	2	
		Nalla	3	
		Pond	4	
		Common well	5	
		Other.....		
5	Due to damage of drinking water sources, how many			

	households got affected?	No. of households.....		
6	Whether the road formation affect the agricultural irrigation sources?	Yes	1	
		No	2	G- Q.1
7	If Yes, which are the agricultural irrigation sources?	Tanks	1	
		Streams	2	
		Nallas	3	
		Ponds	4	
		Common wells	5	
		Other.....		
8	Due to damage of agricultural irrigation sources how many households got affected?	No. of households.....		
9	Whether any mitigation measures taken?	Yes	1	
		No	2	G- Q.1
10	If yes, which are the structures got repaired?	Tanks	1	
		Streams	2	
		Nallas	3	
		Ponds	4	
		Common wells	5	
		Other.....		

F. Livelihood

1	Whether water is taken away from the water bodies for road construction purposes?	Yes	1	
		No	2	H- Q. 1

2	If Yes, which are the livelihoods got affected?	Agriculture	1	
		Livestock	2	
		Horticulture	3	
		Minor Forest Produce Collection	4	
		Other.....		

G. Drinking Water

1	Whether the drinking water sources are used for the road construction?	Yes	1	
		No	2	→ J- Q. 1
2	If Yes, how does it affect the people's requirements?	Drinking water	1	
		Household usage	2	
		Livestock	3	
		Other.....		
3	Whether any measures are taken?	Yes	1	
		No	2	→ J- Q. 1
4	If Yes, what are the measures?	1.		
		2.		
		3.		

H. Other Resources

1	Is there extraction of construction materials such as stones, soil for road construction purpose?	Yes	1	
		No	2	→ J- Q.1
2	If Yes, does it affect	Agricultural land	1	
		Farmers	2	
		Water bodies	3	

I. Ecological

1	Is there contamination of land and water resources due to storage or spillage of materials (example, Bitumen, tar etc.,)	1. Land	Yes	1	
			No	2	→ J- Q.3
		2. Water	Yes	1	
			No	2	→ J- Q.3
2	If Yes, How does it affect	Contamination of water		1	
		Loss of agricultural land		2	
		Vegetation		3	
		Other.....			
3	Does the road cut across ecologically sensitive areas – forests/ national parks/ wildlife corridors?	Yes		1	
		No		2	→ K- Q.1
4	If Yes, Are there any measures being taken to address these issues?	Yes		1	
		No		2	→ K- Q.1
5	What are the measures?	1.			
		2.			
		3.			

J. Benefits of PMGSY Road

1	What are the benefits got from the PMGSY road ?	Good transport facility		1	
		Increased income /		2	
		Easy access to market		3	
		Better reach to schools		4	

		Better reach to hospitals	5	
2	Due to road construction work, whether local people got jobs?	Yes	1	
		No	2 →	Clos e the inte rvie w
3	If yes,	No. of people..... No. of days.....		

Future Scope of Work

The tool and checklist mentioned above has been applied and pilot tested across seven states in India in conjunction with the 'Assessment of PMGSY Roads' a project undertaken by Public Affairs Centre (PAC). The above-mentioned questionnaire checklist denotes a first round of monitoring. Apart from the above mentioned checklist the following need to be undertaken to identify vulnerability and impact of a proposed project on local environment.

CLEIA - Impact Prediction Matrix

CLEIA toolkit is developed with an intention to help the citizens themselves conduct an impact prediction study. To ensure identification of all local concerns regarding the natural resources, the vulnerability in the project areas are to be highlighted and mentioned to the project proponent.

A combination of two methods is chosen depending on the purpose of the study and the access to information. A Focus group discussion should be conducted, and the outcomes from the discussions would be fed into the tool - an Impact Prediction Matrix.

The Focus Group Discussion (FGD) will be carried out with the intention of establishing the issues (past and present) and status of Natural Resources in the area. FGD will be a precursor to the application of the Impact Prediction Matrix, gathering information about the vulnerable resource pools and the vulnerable areas in the project proposed region. The tool as such is an Impact Prediction Matrix, derived from the conventional Leopold's Matrix and Damman et al's Seven Step Framework for Cumulative Effects Assessment.

This tool will document people's concerns about the impacts posed by the project activity. The tool will also identify the possibility of whether the proposed project will have a significant impact in long term in terms of its reversibility to the original state. Locals in the area are the most suitable sources of information to map out the areas, in the project proposed region, to highlight where the impacts could be severe, once they are aware of a particular project activity, they could localize the impact, which in turn would help in developing mitigation measures.

The format for an impact prediction matrix is as below (Table 1).

Column 1, the pathway represents the environmental and social components, which could affect by the activity causing the impact, represented in **Column 2**.

Column 3 represents the concerns and subsequent impacts the citizens realize these activities(mentioned in column 2) can cause on that particular environmental component(column 1).

Column 4 represents possible geographic locations in the area, which are vulnerable to impacts posed by the project activities (these areas are identified during the FDG).

Column 5 represents the duration of the impact, whether it is a short term or a long-term impact.

Column 6 represents the how certain the citizens are about the impacts the activities could generate. They are either certain or uncertain.

Column 7 is for the conductor of the FDG to deduce if that particular impact is significant enough to be irreversible or if it is a minor impact and can avert to how it was before in time.

Column 8 is for any relevant inputs/opinions the conductor of this study can pick up from the FGD.

Table 2: CLEIA - Impact Prediction Matrix

Pathway	Impact Causing Project Activity	Concern Impact	Area Affected	Duration	Certainty In Prediction	Reversibility Of the Impact	Comments
Topography & Land (agricultural, forest cover and other)	Land acquisition						
	Leveling of land						
	Extraction of minerals (In situ quarry)						
	Demolition and construction works						

	Alteration or closure of existing routes						
Soil Characteristics	Leveling of area						
	Digging up borrow pits						
Drainage Pattern	Change in the road alignment						
Public Health	Borrow pits – breeding sites for disease vectors						
	Emission from construction activities and transportation of material						

Employment	Construction						
	Operation						
Water (Water bodies, water quality, water quantity, hydro geological characteristics)	Diversion of river/canal during construction and operation phase						
	Borrow pits, if too large could turning into pseudo ponds						
	Extraction of ground water						
	Extraction of surface water for construction						

	Extraction of surface/ground water by construction camp worker						
Pollution	Disposal of removed vegetation						
	Disposal of debris generated during construction						
	Disposal of any municipal waste generated from the construction camps						
	Increased accessibility to the area – rise in vehicular movements						

CLEIA - Scorecard

The purpose of the CLEIA tool is to enable the community as a unit to evaluate the mitigation measures put forth by the project proponent in the draft EIA report, at the mandatory Public Hearing held in the vicinity of the project proposed area. A community scorecard is a qualitative monitoring tool used for evaluating performance or services provided. However, in this scenario we utilize it to evaluate the mitigation strategies provided by the consultant in the draft EIA report. This tool is constructed to be used just before the Public Hearing (as the draft EIA report is made public prior to public consultation process) so that the citizens reach a general consensus on whether they are happy or not with the proposed mitigation strategies, and make it known at the hearing.

A sample CLEIA – Score Card is as below (Table 2).

Column 2 represents the significant impact generated from the Impact Prediction Matrix, or the other impacts mentioned in the EIA report.

Column 3 covers the mitigation measures the project proponent has proposed to address the impact.

Column 4 tells us the whether the locals approve of the proposed mitigation measures or not.

Column 5 is to understand why the locals do not approve of the mitigation strategies.

Finally, Column 6 is to collect any possible alternatives the locals have to provide.

Table 3: CLEIA - Score Card

Significant Impact	Proposed Mitigation Strategies (from EIA Report)	Score			Reasons	Alternatives
		Happy	Could do with changes	Has to be changed		
Loss of productive land/ natural habitat						

Soil Erosion – Increased loss of top soil						
Change in Soil Characteristics						
Loss of buildings – damage to public utility services						
Pollution	Land					
	Water (Deteriora tion of water quality by spillages, surface runoff etc)					
Loss of Drinking Water & Irrigation Sources						
Blocked Drainage (Due to construction of embankments)						
Reduction in area for Groundwater						

recharge						
Loss of Biodiversity						
Continuous Dust Emissions (Pre-construction, Construction, Operation)						
Potential Risk from construction related accidents						

Alternately, instead of a fixed set of impacts, there is a possibility of including the concerns-impacts generated by the community in the Impact Prediction Matrix and evaluate the mitigation measures proposed for them. Only the significant impacts from the matrix, ones which are irreversible and with a certainty in prediction will be entered into the impacts column in the scorecard. This would help the community address the issues requiring the utmost attention.

Impacts (Issues and concerns showing to be 'irreversible' and 'certain' from the IPM)	Mitigation Measures (Proposed in the EIA report)	Score 1 – 5 Low High	Reasons	Alternatives

CLEIA - Monitoring Checklist

A monitoring plan is usually drawn up by the proponents for the construction and operation phases to make sure that none of the potential impact from the proposed project pose a severe threat to the environment; it is a self-accountable move to ensure that the mitigation measures they have opted for are efficiently functioning to maintain the status quo in the project area.

But, for the purpose of this CLEIA toolkit we will draw up a post-clearance monitoring checklist, which will allow the citizens to evaluate the mitigation measures that they had agreed upon or proposed for an alternative in the scorecard, during the Public

Consultation. This checklist will hold the proponents accountable if they do not comply with the mitigation strategies they had put forth themselves.

This checklist can be utilized on a monthly basis, to check whether the proposed mitigation measures of the activities of the construction phase are functioning. Similarly, once the project is completed, this checklist can be utilized to ensure that the promised mitigation measures are being carried out once the operation begins.

A sample checklist is provided below (Table 3)

Table 4: CLEIA - Monitoring Checklist

Serial No.	Proposed Mitigation Measure	Is the mitigation Plan being followed		Extent of Compliance	Comments
		Yes	No		

State wise Analysis –PMGSY Roads

This section includes the state-wise analysis of the environment impact of PMGSY roads that were assessed, as part of a project on ‘Citizen Monitoring of PMGSY Roads’ which was undertaken by PAC in collaboration with the National Rural Road Development Agency and the World Bank.

Five states namely, Jharkhand, Karnataka, Odisha, Rajasthan, and Uttarakhand were assessed to highlight the socio-environmental impact due to construction of PMGSY roads. The roads were assessed based on the CLEIA Checklist. Volunteers in all five states were trained by the team undertaking the study of quality of PMGSY roads. The volunteers were trained on the need and applicability of the tool. The checklist was explained in detail to the volunteers and questions were clarified.

The roads assessed comprised both completed and ongoing (under-construction) roads in all the five states. Twenty roads, in each of the states were selected in collaboration with the State Rural Road Development Agency. Data was collected based on aforementioned the Community Led Citizen Environment Impact Assessment tool developed by PAC. The section below, details the impacts and various measures undertaken to reduce these impacts in the study states respectively.

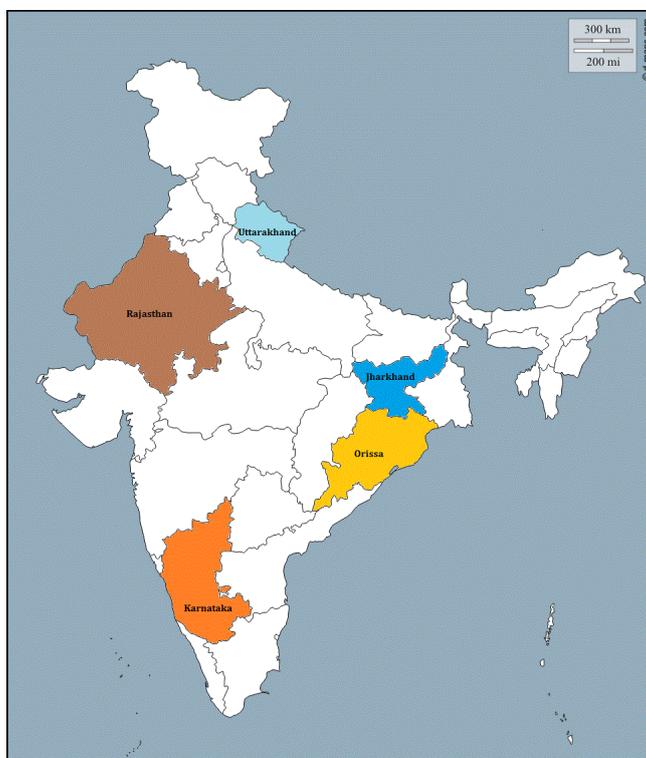


Figure 1: Map of India Highlighting the States where CLEIA was tested

Impact of PMGSY roads on local environment

The figure below (Figure 2), provides a brief overview of the impacts on local environment due construction of PMGSY roads in Karnataka, Odisha, Uttarakhand and Jharkhand. The state of Rajasthan reported no impact due to construction of roads hence; it has not been depicted in the figure below. It can be seen that agriculture has been highly impacted due to road construction. Apart from this, water resources (general sources, drinking water sources, and irrigation sources) have been highly affected due to road construction and lack of proper planning and implementation.

Furthermore, contamination of land and water resources due to improper storage and spillage of bitumen, tar etc. which are used for road construction.

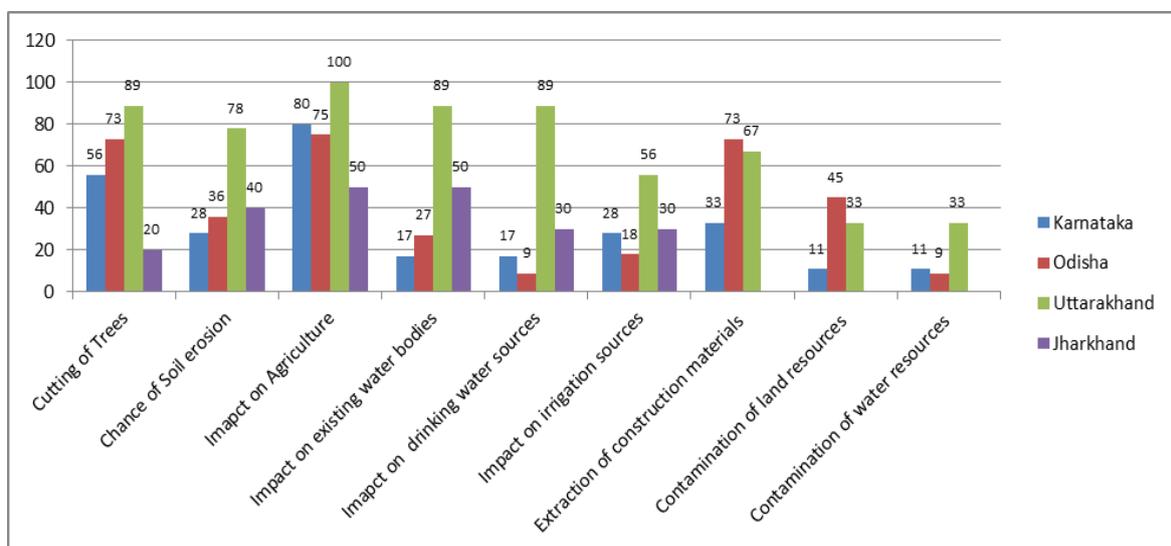


Figure 2: Impact of PMGSY Roads on Local Environment

Mitigation Measures Undertaken to reduce the effects

An analysis of the data collected by the volunteers, highlight that tree plantation measures were undertaken in nearly all the states, with Jharkhand and Karnataka reporting the highest number of trees. There were no trees cut in Rajasthan and hence there were none planted. In Karnataka, though cutting of trees were reported in only 7 of the roads, 12 roads reported plantation measures being undertaken. With regard to the provision of jobs, it can be noted that Karnataka ranks the first with 72% jobs provided for locals as against other states.

It is interesting to note that there have been no ecological measures, undertaken in any of the states, even though some of the PMGSY roads cut across ecologically sensitive areas.

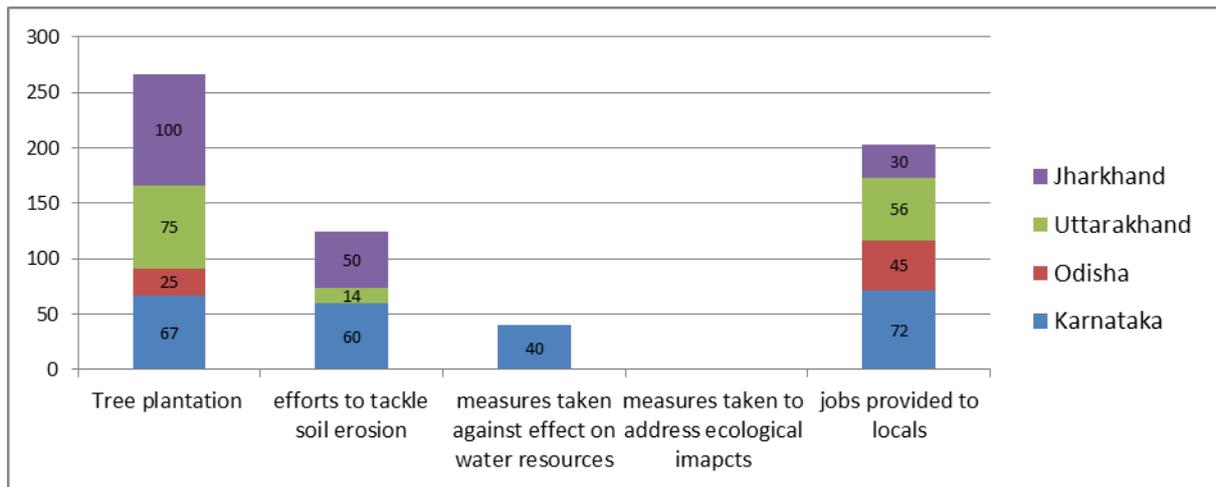


Figure 3: Mitigation measures undertaken to overcome negative impacts

Jharkhand

Twenty roads were assessed in the state of Jharkhand for assessing the environment and social impact of 20 PMGSY roads. Of the 20 roads that were analyzed, 10 were completed roads and 10 are ongoing roads. The roads are located in the districts of Giridih and Deogarh. The data for these roads were collected by volunteers in the study districts, who were part of the 'Citizen Monitoring of PMGSY Roads'.

Completed roads

Based on the questionnaire survey, conducted using the CLEIA – Checklist shows that existing trees were cut due to construction of roads (20% of the respondents), the respondents also indicated that trees plantation measures were undertaken in areas where trees were cut. Nearly 40% of the respondents reported that there was an increase in soil erosion, which according to 50% of the respondents implied road construction has affected agriculture mostly in form of loss of crop and destruction of bunds. The respondents also mentioned that due to the roads, there were increased incidences of rills and ravines in agricultural lands. 50% of the respondents indicated that mitigation measures, in the form of bund construction were undertaken to reduce soil erosion and its impact on agriculture.

With regard to water resources, 50% volunteer respondents indicated that roads affected water bodies in general, and 30% mentioned that drinking water bodies were impacted, with 80% indicating ponds, and 100% indicating negative impacts on common well resources. It was noted by 30% respondents reported that ponds and other water sources used for irrigation. It was also mentioned that no mitigation measures were undertaken to overcome these impacts on irrigational sources. The extraction of water, according to 30% of the respondents has equally affected local livelihoods such as, agriculture, livestock, horticulture and minor forest produce. It was also gathered that no sources of water used for drinking purposes were used for road construction.

All the respondents univocally informed that there was no contamination of land and water sources due to road construction and no materials used for construction were extracted from the surrounding environment.

When discussed about the benefit due to PMGSY roads, it was indicated by 30% of the respondents that local people were provided with jobs. The other benefits associated with PMGSY roads as provided by respondents along six out of 10 roads are shown in the Figure 4.

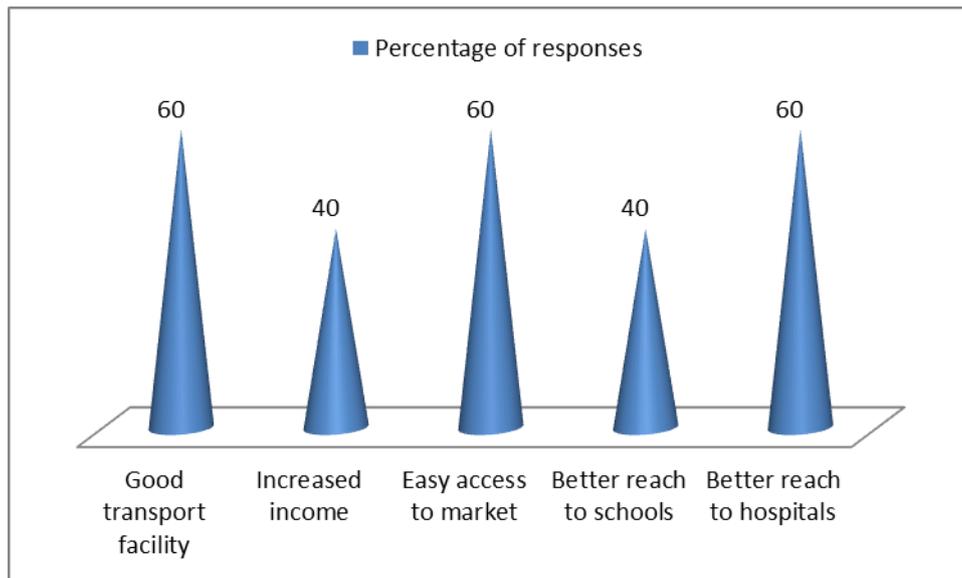


Figure 4: Benefits of PMGSY Roads as reported in Giridih and Deogarh districts, Jharkhand (Completed)

Ongoing roads

When analysing the environmental impact of PMGSY roads under construction, 20% of the respondents identified that existing trees were cut, but only 10% indicated that plantation measures were undertaken. This was associated with soil erosion by 40% of the respondents, of which 75% have indicated that soil erosion will affect agriculture due to loss of crop and decrease in soil fertility as erosion would lead to the formation of rills and ravines. But, 33% have reported construction of bunds have offsets, the above effects.

It was noticed by 50% of the respondents that road construction had affected drinking water bodies such as streams (60% indicated) and common wells (60% indicated by respondents) apart from canals, ponds and tanks, as indicated by 30% of the respondents. It was also noted that extraction of water for construction affected livelihoods (30%) such as agriculture, livestock, horticulture and Minor Forest Produce Collection. Whereas, 33% responded that it did not have an impact on their livelihoods.

It was reported that construction material such as stones and sand were not extracted from the surroundings and there were no indication of contamination of land and/or water resources due to storage/spillage of materials such as bitumen, tar etc.

When discussed about the benefit due to PMGSY roads, it was indicated by 30% of the respondents that local people were provided with jobs. The roads are still under construction at many places and hence the villagers face problems with transportation and therefore the local communities arrived at the conclusion that the benefits of the road were yet unrealized. The other benefits associated with PMGSY roads as provided by respondents along five of 10 roads are depicted in the Figure 5.

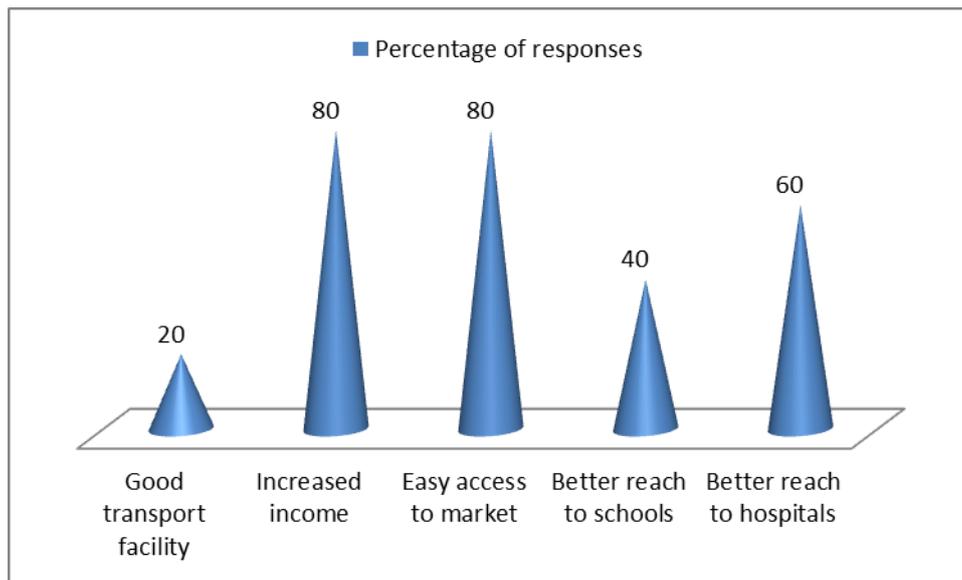


Figure 5: Benefits of PMGSY Roads as reported in Giridih and Deogarh districts, Jharkhand (Ongoing)

Karnataka

Twenty roads were assessed in the state of Karnataka for assessing the environment and social impact of 20 PMGSY roads. All of the 20 roads that were analysed, were completed roads and we have data pertaining to 18 roads. The data for the remaining 2 roads could not be included in the analysis as the data collected could not be validated. The roads are located in the districts of Chikamangaluru and Vijayapura (Bijapur). The data for these roads were collected by volunteers in the study districts, who were part of the 'Citizen Monitoring of PMGSY Roads'.

Completed Roads

Based on the data collected for 18 roads it was reported by 55% of the respondents that existing trees were cut for construction of the roads, and plantation measures were undertaken in nearly all of the roads. 38% of the respondents indicated that tree cutting and road construction increased the case of soil erosion which had an impact on agriculture as reported by 80% of the respondents. This impact on agriculture was associated with loss of soil fertility and loss of crop. It was also reported that in 60% of the cases mitigation measures were undertaken which included construction of bunds, support provided for improving soil fertility, and support for prevention of rill and/or ravine formation.

As indicated, 55% reported that water was drawn from local water bodies which affected livelihoods especially agriculture (reported by 70%), livestock (reported by 30%), and horticulture (reported by 20%). 38% of the respondents indicated that common wells which are the main source of drinking water were used as sources of water for road construction which had an adverse impact on availability of water for drinking, household usage and livestock. Furthermore, it was indicated that no mitigation measures were undertaken to help local communities overcome this impact.

In 38% of the cases, it was reported that road construction affected irrigation sources (mainly tanks, streams and common wells) used for agriculture. But, it was noted by 40% of the respondents that mitigation measures were undertaken, mainly for common wells, and streams.

Respondents (33%) identified that construction materials such as stones and soil were extracted from the surrounding environment which had adverse impacts on agriculture lands (according to 50%) and local water bodies. Only 33% of the respondents indicated to have not been impacted due to such extraction.

Minor contamination of both land and water resources were reported (11%) due to storage and/or spillage of materials such as bitumen and tar. 5% of the respondents indicated that the PMGSY roads cut across ecologically sensitive areas.

When discussed about the benefit due to PMGSY roads, it was indicated by 72% of the respondents that local people were provided with jobs. The other benefits associated with PMGSY roads as provided by respondents are as seen in the Figure 6.

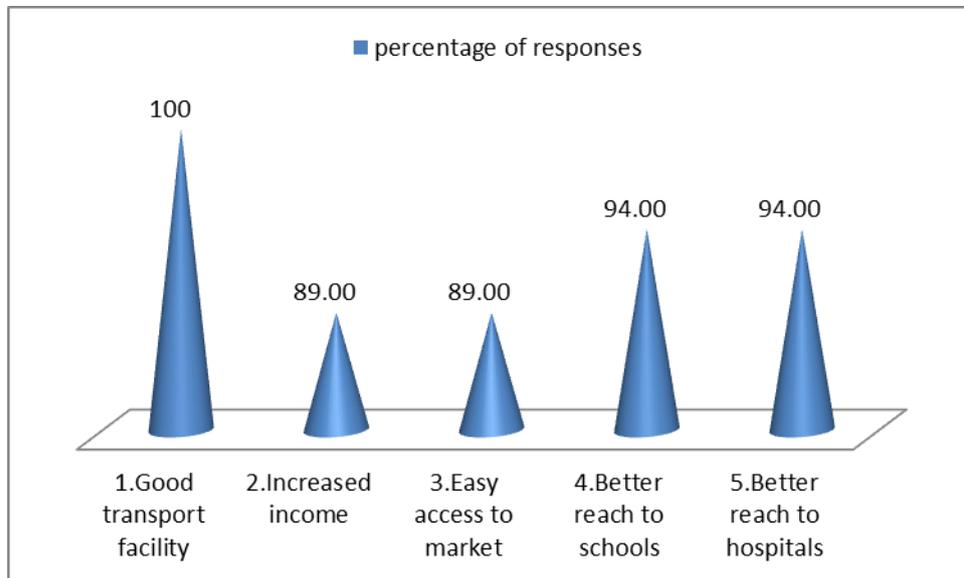


Figure 6: Benefits of PMGSY Roads as reported in Chikmangaluru and Vijayapura districts, Karnataka (Completed)

Odisha

Twenty roads were assessed in Odisha, of the 20 roads that were analysed, 11 were completed roads and 9 ongoing roads. The roads are located in the districts of Puri and Rayagada. The data for these roads were collected by volunteers in the study districts, who were part of the 'Citizen Monitoring of PMGSY Roads'.

Completed roads

Based on the data collected, it was identified that nearly 73 per cent of the respondents reported cutting of trees as part of construction of PMGSY roads, whereas only 25 per cent of the respondents reported that plantation measures were undertaken to offset cutting of trees in their region. Due to which, the respondents also mentioned that the chances of soil erosion have increased (36 per cent) which they described will affect agriculture which is a major livelihood in both the districts. 75 per cent of the respondents who have identified soil erosion have associated this mostly with loss of crop and decrease in soil fertility.

In case of water bodies, 27 per cent of the respondents identified PMGSY roads had an impact on local water resources. Furthermore, 18% respondents reported that drinking water sources were used for road construction which affected household usage. But, only 9 per cent implied that drinking water bodies such as ponds and local canal systems were affected. It was also noted that, in nearly 18 per cent of the cases road construction affected agricultural irrigation sources such as canals and small ponds due to lack of public involvement during planning. Furthermore, 64 per cent of the respondents reported that their livelihoods [*agriculture (29%) and livestock (43%)*] were affected due to utilization of water from local water bodies for construction of the roads.

73% respondents mentioned that construction materials such as stones, soil for road construction purpose were extracted from the surrounding areas, which majorly affected agricultural lands. Whereas 38 % of the respondents identified that extraction of construction materials had no effect on their surroundings.

Contamination of land (45%) and water resources (9%) in the surrounding areas were observed due to storage or spillage of materials (example Bitumen, tar etc.) has led to loss of agricultural land and contamination of water resources.

All the respondents highlighted that no measures for mitigating the above contamination was undertaken by the project proponents.

Nearly 100 percent of the respondents were happy with the benefits of the PMGSY roads as the construction provided locals with jobs (45% of the respondents) and other benefits associated with the roads as indicated by the respondents can be seen in the Figure 7.

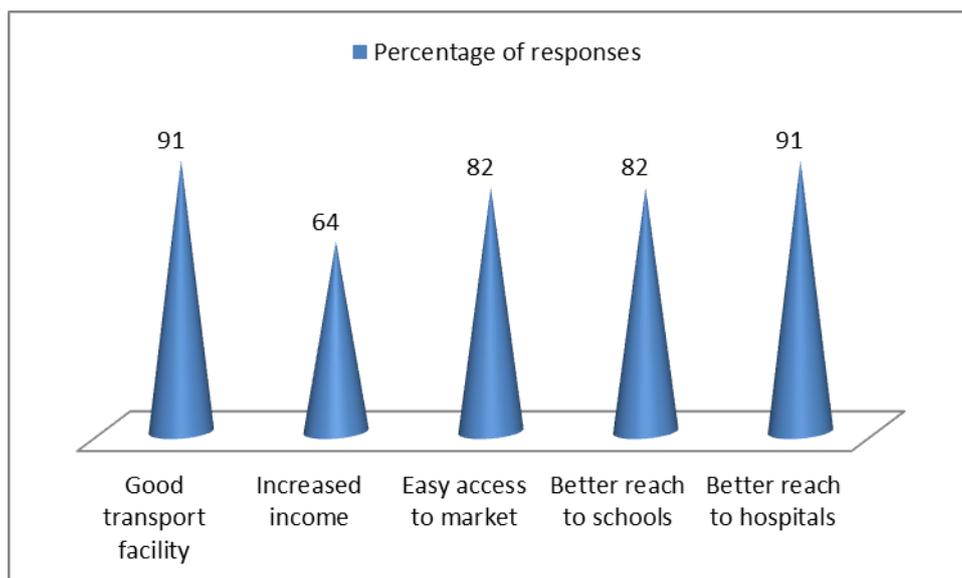


Figure 7: Benefits of PMGSY Roads as reported in Puri and Rayagada districts, Odisha (Completed)

Ongoing roads

Respondents who provided data of ongoing roads, i.e., roads under construction, acknowledged that existing trees were cut (44%) as part of the road construction process. They associated this with soil erosion which was reported by 56% of the respondents. All the respondents (100%) linked loss of crop and decrease in soil fertility to soil erosion. It was also noted that no measures to mitigate the impact.

It was noted that water bodies including drinking water sources were affected due to road construction as 56% and 33% of the respondents mentioned this during data collection. 67% of the respondents pinpointed that extraction of water from drinking water sources for road construction affected household usage of water. It must be noted that none of the sourced of irrigation were affected during the construction of the road. 67% of the respondents mentioned that water was extraction from water bodies for construction purposes and 83% indicated that it had a profound impact on livestock.

56% of the respondents reported that construction materials such as stones and soil for purpose of road construction were extracted from surrounding areas. Furthermore, 40% reported that it affected agricultural lands and the remaining 60% indicated that this extraction did not have any effect on their livelihoods. Additionally, 33% reported contamination of land and 22% reported contamination of water resources due to storage and/or spillage of materials which was reported to affect surrounding vegetation.

Apart from these issues, 56% of the respondents connected road construction with employment opportunities which were provided to local communities. The benefits associated with the PMGSY road as described by the respondents can be seen in the Figure 8.

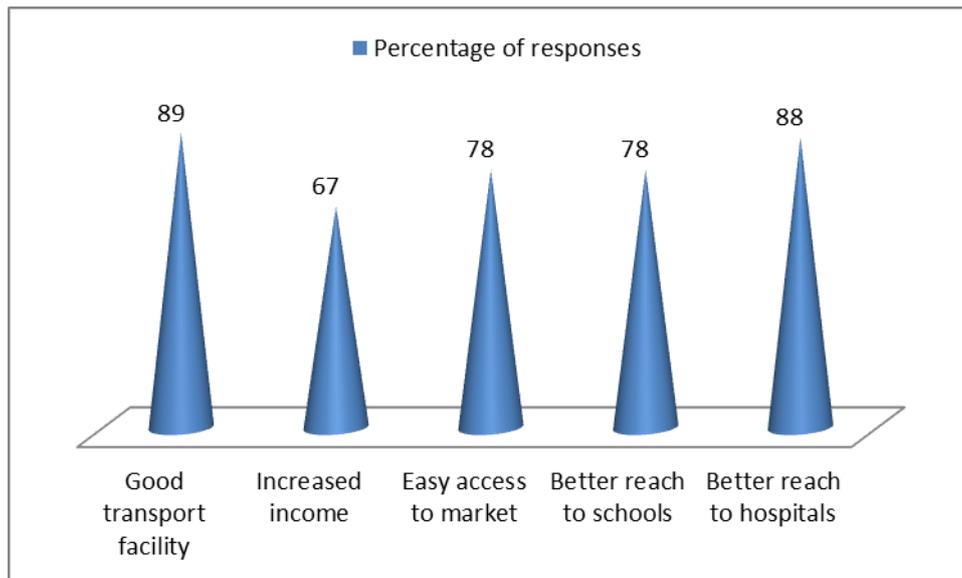


Figure 8: Benefits of PMGSY Roads as reported in Puri and Rayagada districts, Odisha¹ (Ongoing)

¹ Data is presented based on analysis of 9 ongoing roads, as respondents could not document any benefits for 1 road as the construction is still underway

Rajasthan

Twenty roads were assessed in the state of Rajasthan for assessing the environment and social impact of 20 PMGSY roads. Of the 20 roads that were analysed, 10 were completed roads and 10 are ongoing roads. The roads are located in the districts of Jodhpur and Bikaner. The data for these roads were collected by volunteers in the study districts, who were part of the 'Citizen Monitoring of PMGSY Roads'.

Completed roads

The data analysed for the 10 completed roads as indicated by all the respondents are as follows

- No existing trees were cut
- The roads did not lead to soil erosion
- No water bodies and drinking water bodies were affected due to the roads
- No agricultural irrigation sources got affected
- The roads did not have an impact on their livelihoods as well

When discussed about the benefits provided by the completion of PMGSY roads, it was indicated that none of the locals were involved and/or provided with jobs for completion of the roads. The other benefits associated by the local communities with PMGSY roads are shown in the Figure 9.

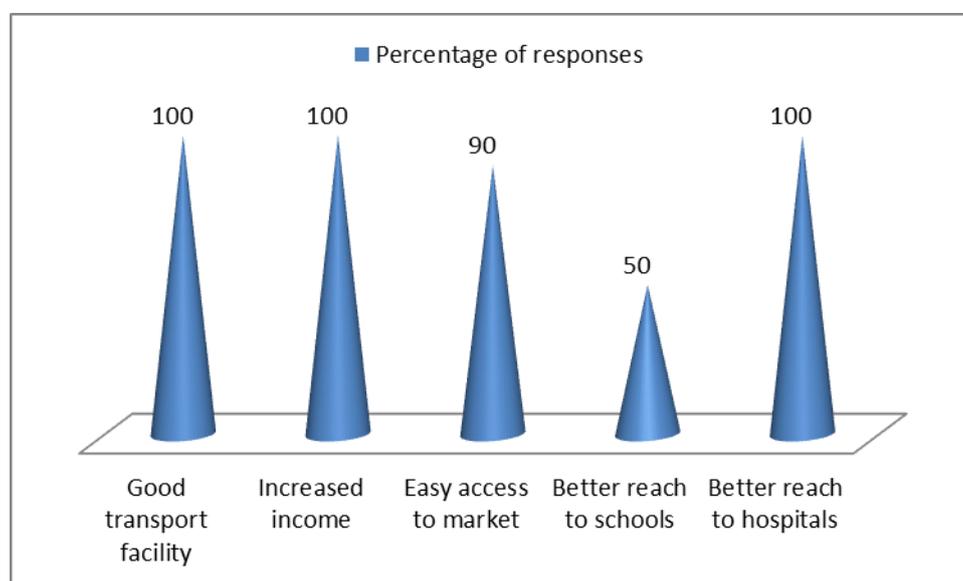


Figure 9: Benefits of PMGSY Roads as reported in Jodhpur and Bikaner districts, Rajasthan (Completed)

Ongoing roads

Respondents collected data for ongoing (roads still under construction) indicated that existing trees were cut (20%) out of which 50% mentioned that tree plantation measures were undertaken as a mitigation measure to replace the cut trees. 10% of the respondents identified chances of soil erosion which they indicated would affect agriculture and lead to a loss of crop and soil fertility.

Respondents reported that road construction affected sources of drinking water (20%) and other water bodies (30%), but it was also noted that no irrigation systems were affected due to road construction. 40% of the respondents mentioned that drinking water were used for road construction, which affected their main source of water used for drinking and other household usage. It was also seen that no measures are undertaken to mitigate this impact by the proponent.

Stones and other material for road construction were mined from the surrounding areas which were reported by 30% of the respondents and which they suggested would affect agricultural land and water bodies. It was reported that there was no contamination of land resources by 10% reported contamination of water bodies due to improper storage of construction materials.

When discussed about the benefits provided by the completion of PMGSY roads, it was indicated that none of the locals were involved and/or provided with jobs for completion of the roads. The other benefits associated by the local communities with PMGSY roads are shown in the Figure 10.

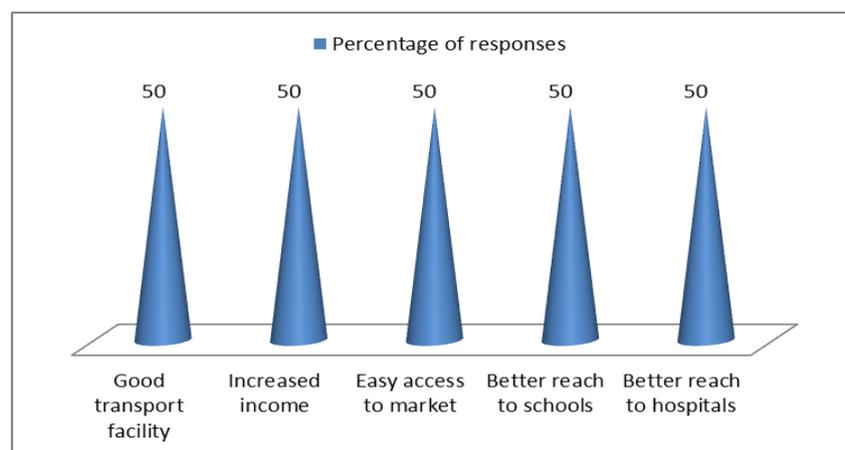


Figure 10: Benefits of PMGSY Roads as reported in Jodhpur and Bikaner districts, Rajasthan² (Ongoing)

² Data on the benefits of PMGSY roads is available only for five ongoing roads. This may be due to the fact that roads are under construction. Hence, analysis has been conducted based on data from 5 roads.

Uttarakhand

Twenty roads were assessed in Uttarakhand for assessing the environment and social impact of 20 PMGSY roads. Of the 20 roads that were analysed, 9 were completed roads and 11 were roads under construction. The roads are located in the districts of Nainital and Tehri Garhwal. The data for these roads were collected by volunteers in the study districts, who were part of the 'Citizen Monitoring of PMGSY Roads'.

Completed roads

Based on the data collected, it was identified that nearly 89% of the respondents reported cutting of trees as part of construction of PMGSY roads, whereas 75% of the respondents reported that plantation measures were undertaken to offset cutting of trees in their region. Due to which, the respondents also mentioned that the chances of soil erosion have increased (78%) which they described is likely affect agriculture which is a major livelihood in both the districts. 100% of the respondents who have identified soil erosion have associated this mostly with loss of crop, decrease in soil fertility, formation of rill/ravines and due to destruction of bunds. It was noted by 14% of the respondents that mitigation measures were undertaken by supporting measures for improving soil fertility.

In case of water bodies, 89% of the respondents identified PMGSY roads had an impact on local water resources. It was reported by 67% that water was withdrawn from local water bodies for construction purposes. Furthermore, 33% respondents reported that water sources were used for road construction which affected water supply meant for drinking and household usage. It was also noted that, in nearly 56% of the cases road construction affected agricultural irrigation sources such as canals and tanks due to lack of public involvement during planning.

67% respondents mentioned that construction materials such as stones, soil used for road construction purposes were extracted from the surrounding areas, which majorly affected agricultural lands (reported by 83%), water bodies (33%), and livelihood of farmers (33 %).

Contamination of land was reported by 33% and water resources were reported by 33% materials in the surrounding areas were observed due to storage or spillage of materials (example Bitumen, tar etc.) has led to loss of agricultural land and contamination of water resources. Apart from contamination 44% reported that the ongoing roads cut across ecologically sensitive areas and no measures were undertaken to overcome this issue. It was reported by the respondents that there has been erosion of soil along the sides of the road and there has been marked destruction of the forest due to lack of replanting of trees.

Nearly 100% of the respondents were happy with the benefits of the PMGSY roads as the construction provided locals with jobs (56% of the respondents) and other benefits associated with the roads as indicated by the respondents can be seen in the Figure 11.

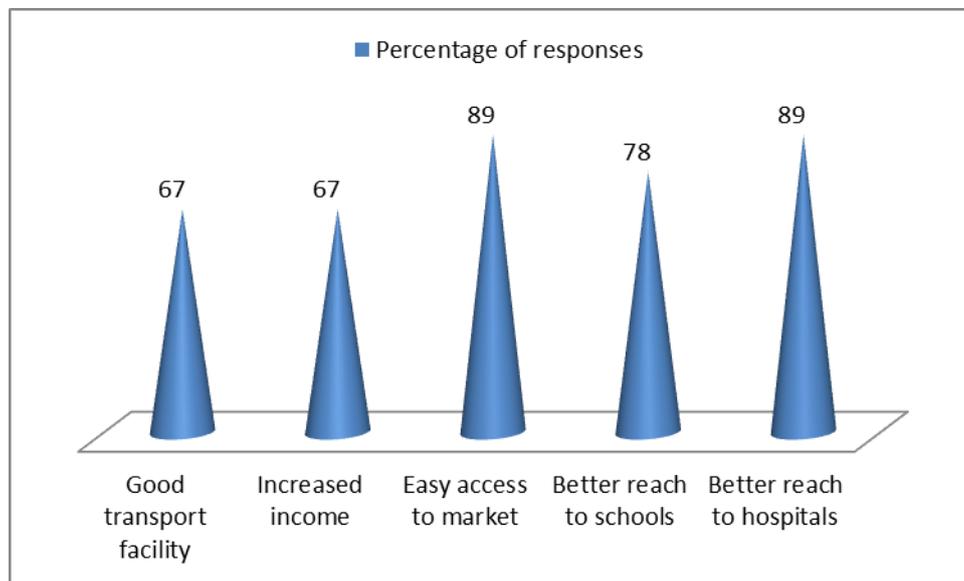


Figure 11: Benefits of PMGSY Roads as reported in Nainital and Tehri Gharwal districts, Uttarakhand (Completed)

Ongoing roads

Respondents collected data for ongoing (roads still under construction) indicated that existing trees were cut (91%). Out of which 50% mentioned that tree plantation measures were undertaken as a mitigation measure to replace the cut trees. 91% of the respondents agreed that the chances of soil erosion due to road construction of which 80% of the respondents indicated erosion would affect agriculture and lead to a loss of crop and 50% associated this with soil fertility, while 60% blamed it for the formation of rills and/or ravines and 40% associated erosion with destruction of bunds. 40% of the respondents highlighted that measures were undertaken to overcome these impacts by supporting control of rill and/or ravine formation and with construction of bunds.

It was seen by the respondents that road construction affected sources of drinking water (100%) and other water bodies (91%), but it was also noted that 82% indicated impact on irrigation systems, such as tanks, canals and streams were affected due to road construction. 11% of the respondents indicated that mitigation measures were undertaken to repair affected infrastructure such as tanks and ponds. All the respondents reported that water was taken away from the water bodies for construction purposes, which majorly affected livestock (45%), Horticulture (45%), minor forest produce collection (36%) and agriculture (27%). Only 18 % of respondents were of the view that no livelihood got affected.

According to 82% of the respondents drinking water sources were used for road construction, which affected their main source of water used for drinking (44%) and other household usage (78%). It was also seen that no measures are undertaken to mitigate this impact by the proponent. It was noted that measures were undertaken with the installation of new pipeline for water supply under a project on natural disasters.

100 % respondents mentioned that construction materials such as stones, soil for road construction purpose were extracted which had an effect on water bodies (55%), and Agricultural land (45%). 18 % respondents indicated to have no effect of the extraction.

Contamination of both land (27%) and water resources (73%) due to storage or spillage of materials such as bitumen, and tar etc. was reported which can lead to loss of agricultural land (50%), contamination of water (37%), and also affect vegetation (37%).

36% of the respondents reported that the roads cut across ecologically sensitive areas and a wall and culverts were constructed to prevent encroachment of forest lands. It was discussed that agriculture lands and village roads were damaged due to dumping of debris from the construction activity.

When discussed about the benefits provided by the completion of PMGSY roads, Furthermore, all the respondents indicated that they are very happy with the facilities provided by due to road construction. Only 18% of the respondents indicated that locals were involved and/or provided with jobs for completion of the roads. The other benefits associated by the local communities with PMGSY roads are shown in the Figure 12.

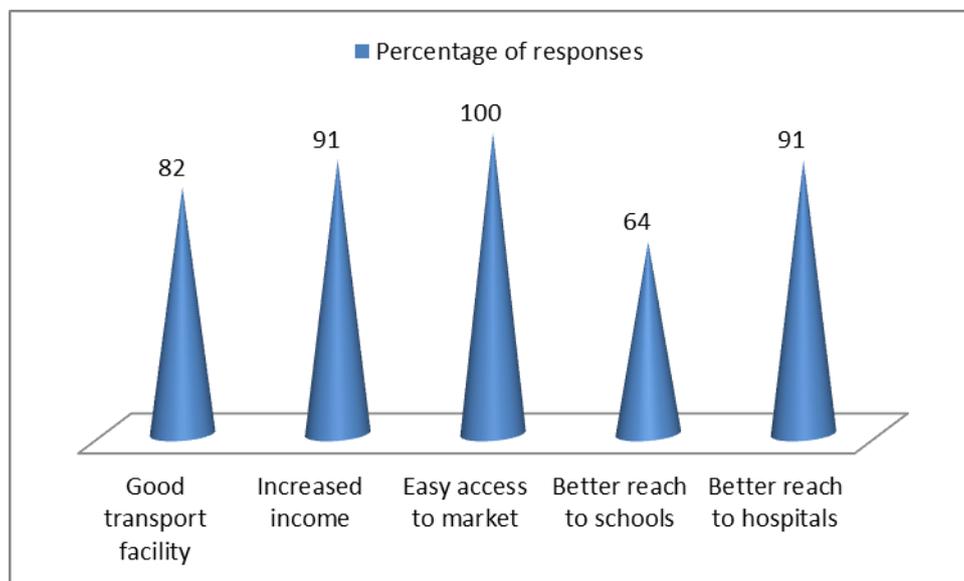


Figure 12: Benefits of PMGSY Roads as reported in Nainital and Tehri Gharwal districts, Uttarakhand (Ongoing)

Conclusion

It can be concluded based on the above state-wise assessment that the roads laid under the PMGSY scheme has impacted the local environment and social conditions. PMGSY roads, though have had an impact on the local environment and ecology, this is mainly in terms of impact on agriculture livelihoods, drinking water sources and water bodies in addition to felling of trees. Even with these impacts it can be said that the roads have increased connectivity, and access to markets and modern infrastructure (such as markets, schools and hospitals) thus, leading to an increase in income. Thus, it can be concluded that on the socio-economic front PMGSY roads have improved the living conditions of the local communities.

During the analysis of the impact of PMGSY roads on the environment, it can be seen that, the roads have impacted, local livelihoods, in terms of building blockage of the flow of water due to construction of the road and flooding of the agricultural lands due to non-construction of culverts and bridges. In addition soil erosion caused during construction of the road has affected agricultural practices in all the states.

The project proponents are required to undertake measures to mitigate the impacts on environment due to road construction. There are no effective measures undertaken to reduce soil erosion and cope with the negative effects of contamination of water sources and the impacts of road construction on the local ecology. The measures undertaken are mostly in terms of tree plantation in all the states.

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