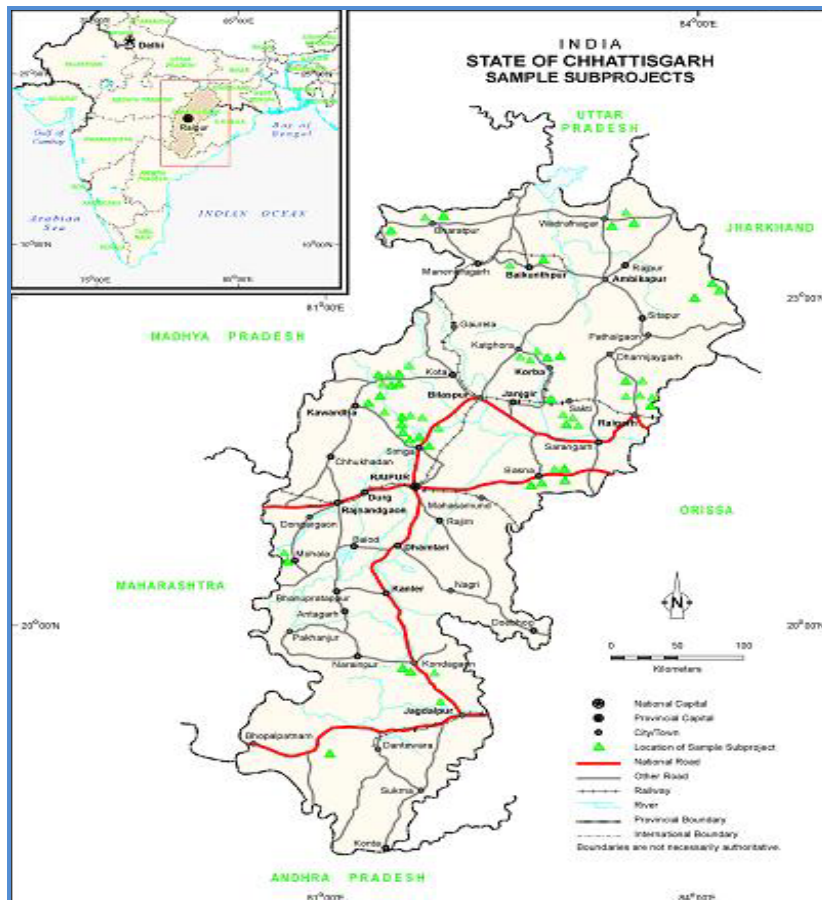# SOCIO-ECONOMIC IMPACT ASSESSMENT REPORT

RURAL ROADS PROJECT - 1

CHHATTISGARH

(ADB LOAN NO. 2018-IND)

APRIL 2009

TECHNICAL SUPPORT CONSULTANTS

OPERATIONS RESEARCH GROUP PVT. LTD

Contents

MONITORING OF SOCIO-ECONOMIC IMPACT – CHHATTISGARH RURAL ROADS

1.0   INTRODUCTION

The project relates to a multi-year program to document and analyze the socio-economic impacts of the construction/ improvement of about 5500 Km of village and Other District Roads (ODR) in Chhattisgarh state through ADB funding of Rural Roads Project No. 1. It is expected that once the project is completed, it will impart direct and indirect benefits to the road users as well as to the people living in the areas/ villages abutting the project roads.

The Project Management Consultants appointed by NRRDA completed the baseline surveys and the subsequent semi-annual surveys during the years 2006 to 2008. The Technical Support Consultants completed the residual surveys in December 2008. The baseline survey report was submitted in the year 2006. In continuation to that report, this report presents the assessment of the socio-economic impact using the data collected as a result of the surveys conducted in December 2008 as mentioned above.

As per the requirement of the TOR, the Consultant has carried out the following surveys:

1)   Traffic Survey (on Sample project and control roads)
2)   Road Users/ Passengers Survey (on Sample project and control roads)
3)   Sample Villagers' Perception (Focus Group)
4)   Village Primary Data Collection (Key Informant Interviews)
5)   Village Primary Data Collection (Community Self Monitoring)
6)   Household Tracer study (Change Process)

The surveys have adopted a systematic and well defined approach based on preparation of pre- improvement *(ex-ante)* baseline data for "Project Road" and "Control Roads", updating the data systematically in pre-defined intervals over a period of about three years. It also includes gathering data/ information through regular community consultation and community based monitoring to verify the change process due to the road improvement.

2.0   STUDY COVERAGE

The present study considers the roads included in the first batch of the ADB funding, having a length of about 500 Km and serving about 1.17 Lakh of population. It covers 70 roads spread out in 211 habitations in different parts of the state. The Batch I roads are the universe for drawing the samples according to the framework set out in Table 1.1.

Table 1.1: Framework and Sample- Size for Socio-Economic Impact Monitoring & Assessment Survey

Sl. No.	Subject	Instrument/ Source	Frequency	Scope
1.	Traffic Survey	24 hour traffic counts	Annual	35 project roads, 10 roads control
2.	Road Users/ Passengers Survey	Passengers/Users	Annual	20 project roads, 6 roads control
3.	Villagers Perceptions	Village focus group	Annual	Principal village for each 20 project roads, 6 control roads
4.	Village Primary Data	Key informants interview	Annual	Principal village for each 20 project roads, 6 control roads
5.	Village Primary Data	Community self-monitoring	Quarterly*	Principal village for each 5 project roads
6.	Change Process	Household tracer studies	Quarterly*	10 households in principal villages for each of 5 project roads

* On the basis of the experience gained during the baseline survey and a subsequent quarterly survey in 2006, it was found that for the sake of the convenience of the respondents and the nature of data being collected, the two quarterly surveys can be changed to bi-annual surveys; the same has been communicated to NRRDA.

The definition of the key words used in the above table is as follows.

Project Road (PR): The rural roads that have been improved / constructed under the Batch 1 of ADB funding.

Control Roads (CR): The roads that are not included in Batch 1 or any other program for road improvement/ construction and also not likely to be taken-up for improvement/ construction during the study period (2005-06 to 2007-08). These roads are located in similar socio-economic milieu as the project roads.

Principal Village (PV): For a project/ control road or a set of project/ control roads, the village falling in its/ their influence area (i.e. being served by project/ control road), and having the maximum population (surrogate for the level of development) from among all the villages in the influence area.

 Households (HH): A house hold (single family) selected for the purpose of survey (household tracer survey) located in the villages falling in the influence area of a project road

3.0   STUDY APPROACH

The suggested approach given in the Terms of Reference (ToR) of the study involves a multi-year surveys on the assessment of the impact of the rural road project, over a period of three years (2005-06 to 2007-08). This is to be achieved by adopting a 'before-after-with-and-without' approach for each of the monitoring instrument and by (i) establishing a control sample of roads selected to match the types of road conditions and social conditions of the

roads to be improved, and (ii) before implementation of the project improvements, conducting a baseline survey for selected first batch of ADB financed road projects and control roads, and iii) after improvement conducting annual monitoring surveys for the same first batch of project roads and control roads.

While adopting the above approach it may be pertinent to remove the effect of the other factors / schemes (other than the impact of road project) that would benefit the population living in the project rural road area. This is done through establishing the counterfactual (i.e., what would have happened had the project never taken up or what other-wise would have been true in the absence of the project). The concept of counterfactual is introduced in the impact analysis exercise through the use of 'comparison' or 'control' groups.

The selection of control roads is crucial to the impact evaluation design and the method is based on the nature of a project being analyzed. The present project resembles a case of ex-post selection process where the 'benefited' and 'control' groups were not formed through experimental design, rather they are selected after the projects were identified or were being implemented. Thus the non-random method is more suitable for the present analysis where the 'control' group resembles the 'benefit' group on the basis of some observed characteristics. In the present analysis, 'population served' by a road is considered as the characteristics for resemblance between the 'control' roads and 'project' roads. The impact evaluation is based on the double-difference (difference–in-difference) method, in which the first difference between the 'control' and 'benefit' groups is taken before the project and the second difference is taken after the project implementation. The schematic diagram showing the application of double-difference method is presented as Diagram 1.0.

Diagram 1.0: Application of Double – Difference Method

Base Line Survey	Multi-Year Survey	Percentage Change (First Difference)	Percentage Change (Second Difference)
Project Roads (PB) →	Project Roads (PA) →	X : PA - PB	X - Y
Control Roads (CB) →	Control Roads (CA) →	Y : CA - CB	
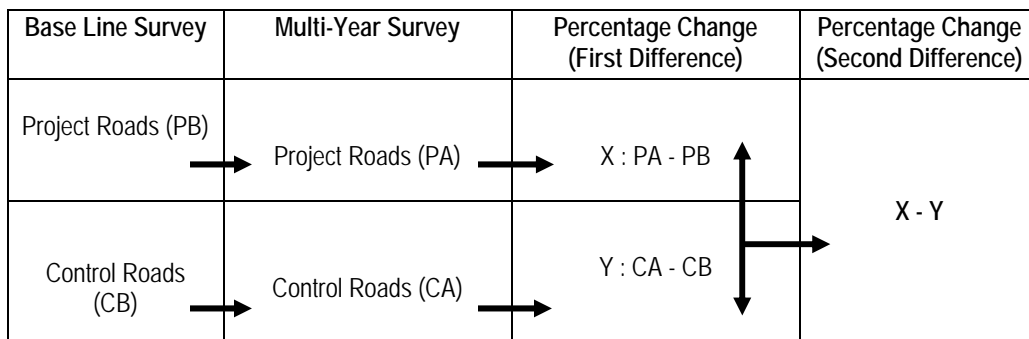
In addition to the quantitative data collection and its analysis, qualitative data has been collected and analyzed, mainly with a view to perform consistency checks identifying any other variable that are important for impact assessment and obtaining feedback from the people that would help in data interpretation and analysis.

4.0 SOCIO-ECONOMIC IMPACT ASSESSMENT

Following the study approach described above, the socio-economic impacts resulting from the improvement/ construction of the project roads, have been assessed through the use of the six Survey Instruments presented in Table 1.2. First two survey instruments are used to assess transport related impacts; the 3rd, 4th, and 5th instruments concern village level information/ data; and the 6th instrument monitors the change process at the 'sample house hold' levels. The information/ data to be collected through 4th and 5th instruments are more or less similar.

It may be mentioned that the assessment of impact over the baseline situation has been carried out by comparing the situations in PR and CR on an overall average basis rather than distributing PRs to CRs, i.e. assigning on the basis of certain criteria the PRs to certain CRs (as the number of PRs is more than the CRs) and then comparing the individual averages at CR levels.

Table 1.2: Survey Instruments & their Purpose in Impact Assessment

Sl. #	Survey Instrument	Purpose
1.	Classified Traffic Census Count Surveys	To record change in traffic volumes, composition, etc.
2.	Transport User's Survey	To know and record the patterns of transport use
3.	Villagers' Perceptions-Village Focus Group	To identify villagers perceptions of expected and actual socio-economic and poverty reduction impacts, and record significant events and changes identified by villagers
4.	Village Primary Data (Key Informant)	To collect primary data on key indicators of impact
5.	Village Primary Data (Community Self-Monitoring)	To identify and document indicators that are especially relevant to village life
6.	Change Process	To identify the process of change associated with the project road improvements and its impact on the households

4.1 Transportation Related Impact

4.1.1 Traffic Volumes

The basic unit adopted for comparing the growth in traffic on PRs and CRs is daily traffic per road (Table 1.3). In the baseline situation the composition of vehicles follow almost the same composition with the share of motor cycles and bi-cycles being substantially higher than the other modes. The daily number of vehicles on PRs seems to have increased more than the CRs, except in case of bi-cycles, where the absolute numbers have increased marginally in case of both the PRs and CRs. The highest number of increase has been observed in number of truck/mini trucks followed by bus/ minibuses and cars/ jeep/ taxi. Thus with the improvement of project roads the number of public transport modes as well as goods transport modes have increased more than the other modes of transport.

Table 1.3: Average Daily Traffic per Road

Vehicle	Impact Assessment (%)		
	Percentage Change		Difference (PR over CR)
	PR	CR	
Motor Cycles	2	2	0.25
Cars/jeeps/taxis	4	3	1.55
Bus/ Mini-Bus	6	3	3
Truck/ Mini-Truck	7	2	5
Tractors	2	2	0.26
Bi-cycles	2	2	-0.15

4.1.2   Impact on Transport Users

The improved road conditions are expected to benefit the road users more than the users of other roads that have not been taken up under any program for improvement. The impact of the improvement of project roads on road users is summarized in Table 1.4.

Table 1.4: Impact of Road Improvement Road Users

Transportation Related Indicators	Percentage Change Over Baseline	
	PR	CR
Average Journey Distance (Km)	5.18	-0.55
Average Fare Per Km (Rs.)	2.77	6.33
Avg. Monthly Expenditure on Transport (Rs.)	-0.32	4.86
Journey Purpose		
Education	0.05	0.01
Work	11.22	0.06
Hospital	10.1	0.03
Market	10.12	7.02
Social Work	11.15	-13.07

While the average distance traveled by the road users on PR has increased by 5.18%, it has reduced by 0.55% as compared to the baseline situation. The average fare per km has increased by about 2.77% on PR, whereas the same has increased by about 6.33% on CRs. The average monthly transport   expenditure of the users on PR has reduced by about 0.32% and that of CR users, it has increased by 4.86% almost at the same level compared to the baseline figures.

Road users' trip purpose has been impacted in varying degree. In case of PRs the share of trips relating to work, hospital, social work and market has increased, whereas for CRs the trips concerning market has shown some significant increase, while for social works, there is a significant decline of 13.07%.

4.3   Villagers' Perceptions (Focus Group) About Impact

A group representing people with different background (Focus Group) were asked about their opinion on the current condition of the different facilities available in their village and the expected change in the situation concerning the facilities in future due to improvement in road condition.

The changes in the perception of the villagers regarding the quality of services relating to different facilities do indicate the acceptance of the improvement / deterioration of the services/ facilities. The change in the perception of the villagers (Focus group) has been assessed through the percentage increase/ decrease in the response over the base year situation. The percentage increase/ decrease has been estimated for the 'Current Situation' prevailing in the year 2005-06 and 2007-08 and the 'Anticipated Situation' as perceived in the years 2005-06 and 2007-08 for both PR and CR.   To an extent, the Anticipated Situation'   in the year 2005-06 is a reflection of the 'Current Situation' prevailing and in 2007-08, whether the road improvement program has progressed as anticipated by the Focus Group.

 The results of the perception survey undertaken in the villages linked to PRs and CRs are summarized in Table 1.5. The table presents the views (on improvement/ deterioration of services) of the Focus Group concerning indicators, viz., transport services, health services, education, micro-enterprises, government program, and participation of people in development activities, road safety, agriculture and employment.

The table presents the results of the comparison of 'current situation' (as perceived by the Focus Group) over the survey period 2005-06 to 2007-08; and similarly comparison of 'anticipated situation' has been made. The results reveal that, generally, the villagers living in the areas served by the Project Roads are more satisfied than those living in the areas served by the Control Roads in terms of levels of facilities relating to transport, health, education, agriculture etc. With regard to 'transport', 'micro enterprise', 'poverty alleviation' under Government Programs & Services and 'agriculture' facilities, there seems to be higher level of satisfaction to the villagers as indicated by the Focus Group. When enquired about the opinion on the anticipated service levels, the respondents appeared to be of different opinion with respect to the expected quality of the service levels from different facilities. This view is but to be expected as the respondents want a better quality of life through the improved level of the services.

The abbreviation 'I" means increase in number of response (for particular attribute, such as 'G' – good, 'F' – fair, etc.) over the years; similarly "D" connotes decrease, "NC" is no change. A "blank" in any column/ row means the option was not franchised by the respondents.

Table 1.5: Focus Group Perception about Village Level Facilities

Indicators		2005-06 to 2007-08 Current Situation / Condition			2005-06 to 2007-08 Anticipated Situation/ Condition		
Transport Services		Availability	Frequency	Quality of Ride	Availability	Frequency	Quality of Ride
PR	G	I	I	I	I	I	I
	F	I	I	I	I	I	I
	P	D	D	D	D	D	D
CR	G	D	NC	D	NC	NC	NC
	F	NC	D	NC	D	NC	D
	P	NC	D	NC	NC	D	D
Health Services		Primary Health Care	Multi-purpose Health Worker /Aaganwadi	Veterinary Dispensary	Primary Health Care	Multi-purpose Health Worker / Aaganwadi	Veterinary Dispensary
PR	G	I	I	NC	I	I	NC
	F	NC	I	I	I	I	
	P	D	D	D	D	D	D
CR	G	D	NC	NC	D	NC	NC
	F	D	NC	D	NC	D	
	P	D	I	D	D	D	D
Education		Primary	Middle	Higher Level	Primary	Middle	Higher Level
PR	G	I	I	I	NC	NC	I
	F	D	D	D	I	I	I
	P	NC	D	D	D	D	D
CR	G	NC	NC	NC	NC	NC	I
	F	I	I	NC	NC	NC	I
	P	D	D	D	D	D	D

Micro Enterprises		Petty Manufac-turers	Traders	Self employed	Availability News paper	Petty Manufac-turers	Traders	Self employed	Availability News paper
PR	G	I	NC	I	I	NC	I	I	I
	F	I	I	I	I	I	I	I	I
	P	D	D	D	D	NC	NC	NC	NC
CR	G	NC	NC	NC	NC	NC	NC	NC	NC
	F	I	NC	NC	I				
	P	NC	D	NC	D	D	D	D	D

Government Programs & Services		Poverty Alleviation	Social Security Services	Poverty Alleviation	Social Security Services
PR	G	I	I	NC	NC
	F	I	NC	NC	NC
	P	D	D	D	D
CR	G	D	NC	NC	NC
	F	I	D	NC	NC
	P	I	I	NC	NC

Parameter		2005-06 to 2007-08 (Current Situation/ Condition)			2005-06 to 2007-08 (Anticipated Situation/ Condition)		
Participation of people in activities		Social Development	Political Activities	Social Gathering	Social Development	Political Activities	Social Gathering
PR	G	I	I	I	I	I	I
	F	I	I	I	NC	NC	NC
	P	D	D	D	D	D	D
CR	G	I	I	I	I	NC	NC
	F	I	I	I	I	NC	NC
	P	D	D	D	NC	D	NC

Agriculture		Cash crops/ medicinal plants farming	Transportation of agricultural products	Use/ supply of fertilizers	Mechanised farming practices	Cash crops/ medicinal plants farming	Transpor-tation of agricultural products	Use/ supply of fertilizers	Mechanised farming practices
PR	G	I	I	I	I	I	I	NC	NC
	F	I	I	I	I	NC	NC		
	P	D	D	D	D	NC	NC		
CR	G	D	D	I	NC	D	NC	NC	NC
	F	I	D	I	I	I	NC		
	P	I	I	D	NC	NC	NC		

Employment		Employment Opportunities		Empowerment of poor and women		Employment Opportunities		Empowerment of poor and women	
PR	G	NC		I		NC		I	
	F	NC		I		NC		I	
	P	D		D				NC	
CR	G	NC		NC		NC		NC	
	F	NC		I				NC	
	P	D		D				NC	

Note : G= Good, P= Poor, F= Fair, M= More, L = Less

4.4 Village Primary Data (Key Informant & Self-Monitoring) on Impact Monitoring & Assessment

In the previous section, the change in indicators over the years was assessed on the basis of the views/ perception of the focus group. In the present section the change in indicators is assessed on the basis of the data collected at the village level from the secondary sources as maintained by the Village officials. The demographic data/information is collected from the '*sarpanch*' (village headman) or his secretary, health related information is collected from the village health worker, education related information is collected from the village school teacher. Some of the database like the village agricultural sector, land values, employment, housing facilities, and micro-enterprises is generated from collective opinions / views of the habitation.

The impact is summarized in Table 1.6. For each of the indicators/ attributes, the percentage change relating to PRs and CRs have been worked out and finally the difference of PR over CR is assessed in the last column of the table. A positive figure indicates 'net increase' and a negative one shows 'net decrease'. The net increase/ decrease can be

considered as a result of improvement of roads. In some cases the base line figures are small (e.g. 1 or 2) and any marginal increase (say by 1 or 2), the percentage increase becomes high.

Public / private transport: Private ownership of the vehicles is reported in the case of tractor, bi-cycle and motor cycles categories. The project roads have encouraged the use of motor cycles. The public transport is mostly in the form of buses, jeeps / three wheelers. There is an increasing trend of private transport (motor cycles) which is likely to continue in the state as many regions closer to the *Narmada* and *mahanadi* rivers are experiencing good agricultural growth reflecting in high growth of wealth (in the form of consumer durables like tractors, motor cycles, TV sets, etc.). In many cases, the large farmers are reported to prefer to switch over from the traditional bullock led tilling to the tractor led tilling. The presence of tractor is also encouraging faster haulage of the farm produce to the markets, a facility readily available for the large farmers. The role of the project roads is reported to be significant in inducing the large farmers to switch over to the tractor use from the traditional bullock cart haulage.

Average time and distance: In the case control roads, the average journey distance and the travel time on has increased.

Transport Fares: Field discussions with the transport operators as well as the transport users reveal that the fares have increased both on the project and the control roads, however, the increase is more in case of CRs compared to the PRs.

Health Services: The reasons for rise in the safe deliveries; and, reduction in the maternal / pre-natal deaths are a) partly attributable to the project roads and b) partly to the increased emphasis on the counseling undertaken by the health worker in the village.

Education: Project roads have encouraged teachers' attendance as well as the school inspections. This has largely improved the academic performance of the students.

Table 1.6: Summary of Village Primary Data

Transport (Public)		Impact Assessment (%)		
		Percentage Change		Difference (PR over CR)
		PR	CR	
No. of main transport modes (buses/ jeeps/ etc.) serving the village in a day	Bus	108	1	107
	Jeep	3	1	2
	Taxi	4	1.5	2.5
Quality of main transport (%)	Good	11	0	11
	Bad	-3	1	-4
Frequency of main transport:		30	19	11
Average Journey Distance in KMs		2.5	12	-9.5
Average Journey time in minutes		-14	1	-15
Fares of main transport mode (Rs. per Km)		6	12	-6
Road condition for through journey to principal destination	Good	10	0	10
	Bad	-2	-1	-1
Transport (Private)				
Bullock Cart		37.13	14.32	22.81
Bicycle		-0.74	13.79	-14.53
Motorcycle		17.04	16.52	0.52
Tractor		21.38	2.06	19.32
Health Services				
Total Births (number)		-19.66	-19.05	-0.61
% of Safe delivery		0.73	0.5	0.23
% of Maternal deaths		-4.02	-0.05	-3.97
% of Pre-natal deaths		-5.65	7.1	-12.75
Number of children under the age of 5		-8.92	-14.93	6.01
Mortality under 5 yrs. Age (%)		-2.72	-1.85	-0.87
No of Immunization coverage Programs		16.44	4.68	11.76
Education Services				
Number of school age children		16.39	12.59	3.8
Un-enrolled school age children (%)		-13.61	-7.06	-6.55
Post-primary drop out rate (%) - Boys		-8.7	-10.01	1.31
Post-primary drop out rate (%) - Girls		-0.06	2.3	-2.36
Number of primary teachers		22.06	15.84	6.22
Attendance of teachers (%)		7.01	3.54	3.47
Primary school inspection (number)		28.29	0.9	27.39
Agriculture				
Average no. of farmers in the village		0.76	0.05	0.71
% of farmers who have accepted crop diversification		0.11	0.16	-0.05
Quantity of agril. Produce in the village in the last year (in tons)		-1.75	-13.47	11.72
Quantity of produce marketed in the last year (%)		-1.07	-6.04	4.97
% of Villagers visiting Haats		19.57	13.47	6.1
No. of traders that are accessible for marketing forest products (NTFP)		0.72	0.42	0.3
% of agricultural produce being spoiled / wasted / damaged in transit		-12.7	5.62	-18.32
% of agricultural produce not being able to transport due to bad road		-5.19	11.49	-16.68

Transport (Public)	Impact Assessment (%)		
	Percentage Change		Difference (PR over CR)
	PR	CR	
Land Values			
Agriculture Land (Rs. Per Acre)	13.93	4.45	9.48
Commercial Land (Rs. Per Acre)	23.64	17.46	6.18
Residential Land (Rs. Per Acre)	26.49	20.26	6.23
Employment			
No. of employed (Formal & Informal) people in the village/ Block/ district (man and women)	8.25	-6.46	14.71
Wage rate for labor in village (Rs. Per day) - Men	9.83	5.3	4.53
Wage rate for labor in village (Rs. Per day) - Women	13.94	9.38	4.56
No. of people entering village for employment from outside	-9.91	-4.48	-5.43
% of people living below poverty line (BPL families)	-1.71	0.2	-1.91
% of UPL	-2.98	2.76	-5.74
Housing Facility			
Electric connections	4.44	0.4	4.04
Drinking water supply:	7.56	0.45	7.11
T/W Open well	0.38	0.25	0.13
Sanitation/ toilet facility:	3.73	0.35	3.38
Telephone Connection	8.51	3.08	5.43
STD Booths	0.72	0.11	0.61

4.5 Change Process Impacting Households (Household Tracer Survey)

The change process involves recording data for selected house hold (benefited from the project (due to road improvement), over the survey period. For these house holds, classified into non-poor, poor and ultra-poor, the change in development indicators/ attributes have been averaged and summarized in Table 1.7 to Table 1.9. The change process impacting the sample households has been assessed on the basis of the percentage response against the key indicators, over the survey period.

Table 1.7: Summary of Change in Indicators - Sample Households (Non Poor)

Non Poor		Jan-06	Jan-07	Jun-07	Jan-08	Dec-08
Per Capita Income per annum		4374	5930	7411	12135	13750
Per Capita Expenditure per annum		3328	4613	3927	4265	5150
		Percentage (%)				
Movable Assets	TV/Radio	33.3	40.0	46.7	40	42
	Furniture	53.3	80.0	86.7	100	90
	Agriculture implements	20	33.3	46.7	60	65
	Cattle Stock	80	86.7	86.7	73.3	75
	Motor Cycles	13.3	13.3	13.3	6.7	7.5
	Bicycles	86.7	86.7	93.3	86.7	85
Immovable Assets	Agriculture Land	80	86.7	86.7	100	95
	House Site	100	100.0	100.0	100	100
	Tube wells	6.7	6.7	6.7	6.7	6.7

Non Poor		Options / % of HH response	Jan-06	Jan-07	Jun-07	Jan-08	Dec-08
Description of the service		Options / % of HH response	Percentage (%)				
Health Services	Frequency of the family members visiting a clinic/ hospital 1) Once a week, 2) Fortnightly, 3) once a month, 4) once in three month,	1	13.3	6.7	6.7	0	0
		2	20	26.7	20.0	6.7	5
		3	40	40.0	33.3	13.3	20
		4	13.3	20.0	33.3	80	75
	Reasons for avoiding the visit to clinic / hospital a) cannot afford, b) cannot find time c) Bad Road, d) Transport Cost	a	20	40.0	66.7	33.3	30
		b	6.7	6.7	20.0	6.7	5
		c	53.3	33.3	26.7	6.7	5
		d	0	22.3	26.7	20	15
	Health Services Mode used to reach hospital	Tractor	40	26.7	6.7	10	5
		Bullock Cart	26.7	20.0	20.0	30	20
		Jeep	26.7	13.3	33.3	20	30
		Bus	20	40.0	40.0	40	45
	Number of times failing to reach hospital in time (in the last 3 months) due to non availability of transport	Once	6.7	6.7	6.7	6.7	6.7
		Twice	6.7	6.7	6.7	0	0
		Thrice	0	0.0	0.0	0	0
		> thrice	6.7	0.0	0.0	0	0
	Availability of medical facilities (such as immunization; visit of health worker, etc.) to the family (Yes/ No)	Yes	46.7	73.3	100.0	100	100
		No	53.3	26.7	0.0	0	0
Levels of Education - modes used and fares paid			Percentage (%)				
Primary School (Up to 5th Class)	Mode of Transport (%)	Walk	100	100	100	100	100
	Main Transport related problem	Yes	33.3	20	6.7	0	0
Middle School (Up to 8th Class)	Mode of Transport (%)	Walk	80	86.7	86.7	80	85
		Bicycle	20	13.3	13.3	20	15
	Main Transport related problem (%)	No	53.3	73.3	93.3	90	95
		Bad Road/ TNA/ TCH	46.7	26.7	6.7	10	5
High School (Up to 10th Class)	Mode of Transport (%)	Walk	66.7	83.3	100	50	70
		Bicycle	33.3	16.7	0	50	30
	Main Transport related problem (%)	No	27.3	83.3	100	100	100
		Bad Road/ TNA/ TCH	72.7	16.7	0	0	0
Intermediate School (Up to 12th Class)	Mode of Transport (%)	Walk	73.3	60	100	0	0
		Bicycle	53.3	40	0	100	100
	Main Transport related problem (%)	No	41.7	40	93.3	100	100
		Bad Road/ TNA/ TCH	58.4	60	6.7	0	0
Graduation and above	Mode of Transport (%)	Bicycle	33.3	0	0	0	0
		Bus	73.3	100	100	100	100
	Main Transport related problem (%)	No	27.3	66.7	93.3	100	100
		Bad Road/ TNA/ TCH	72.7	33.3	6.7	0	0
Environmental Aspects-Fuel			Percentage (%)				
	Firewood	Own Collection from any source	93.3	80	86.7	100	100

Non Poor			Jan-06	Jan-07	Jun-07	Jan-08	Dec-08
		Purchase from a shop	40	33.3	33.3	0	0
	Kerosene	from Fair Price Shop (PDS System)	100	100	100.0	100	100
		Own cattle	86.7	73.3	53.3	73.3	75
	Dung Cake	Purchase from a shop	20	0	0.0	0	0
		Own collection from the open area	53.3	46.7	40.0	60	65

Note : TNA/ TCH - Transport not available/ Transport cost high

Table 1.8: Summary of Change in Indicators - Sample Households (Poor)

Non Poor			Jan-06	Jan-07	Jun-07	Jan-08	Dec-08
Per Capita Income per annum			3950	5623	6350	8905	9750
Per Capita Expenditure per annum			2999	3280	3715	4350	4675
			Percentage (%)				
Movable Assets	TV/Radio		45	40	40	60	55
	Furniture		15	15	15	100	90
	Agriculture implements		20	20	20	60	70
	Cattle Stock		60	60	60	75	75
	Motor Cycles		0	0	0	0	10
	Bicycles		75	75	75	75	80
Immovable Assets	Agriculture Land		70	70	70	85	90
	House Site		95	95	95	100	90
	Tube wells		0	0.0	0.0	0	0
Description of the service		Options / % of HH response	Percentage (%)				
Health Services	Frequency of the family members visiting a clinic/ hospital 1) Once a week, 2) Fortnightly, 3) once a month, 4) once in three month	1	20	20.0	0.0	10	0
		2	15	10.0	0.0	5	10
		3	15	30.0	30.0	40	40
		4	15	40.0	45.0	45	50
	Reasons for avoiding the visit to clinic / hospital a) cannot afford, b) cannot find time c) Bad Road, d) Transport Cost	a	35	75.0	85.0	15	75
		b	0	5.0	15.0	5	15
		c	55	35.0	15.0	10	5
		d	10	15.0	15.0	20	5
	Mode used to reach hospital	Tractor	35	15.0	15.0	10	10
		Bullock Cart	40	35.0	20.0	5	5
		Jeep	25	40.0	35.0	20	30
		Bus	30	10.0	30.0	35	55
	Number of times failing to reach hospital in time (in the last 3 months) due to non availability of transport	Once	20	25.0	20.0	20	15
		Twice	5	0.0	0.0	5	0
		Thrice	0	0.0	0.0	0	0
		> thrice	0	0.0	0.0	0	0
	Availability of medical facilities (such as immunization; visit of health worker, etc.) to the family (Yes/ No)	Yes	45	70.0	100.0	100	100
		No	55	30.0	0.0	0	0

Non Poor			Jan-06	Jan-07	Jun-07	Jan-08	Dec-08
Levels of Education - modes used and fares paid			Percentage (%)				
Primary School (Up to 5th Class)	Mode of Transport (%)	Walk	75	100	100	100	100
	Main Transport related problem	Yes	0	0	0	0	0
Middle School (Up to 8th Class)	Mode of Transport (%)	Walk	80	85	85	33.3	30
		Bicycle	20	15	15	66.7	70
	Main Transport related problem (%)	No	45	75	90	100	100
		Bad Road/ TNA/ TCH	55	25	10	0	0
High School (Up to 10th Class)	Mode of Transport (%)	Walk	55	15	50	0	0
		Bicycle	45	85	50	100	100
	Main Transport related problem (%)	No	40	65	90	100	100
		Bad Road/ TNA/ TCH	60	35	10	0	0
Intermediate School (Up to 12th Class)	Mode of Transport (%)	Walk	40	25	0	0	0
		Bicycle	50	75	100	100	100
	Main Transport related problem (%)	No	40	75	95	100	100
		Bad Road/ TNA/ TCH	60	25	5	0	0
Environmental Aspects-Fuel			Percentage (%)				
	Firewood	Own Collection from any source	85	75	80.0	80	85
		Purchase from a shop	45	30	40.0	45	40
	Kerosene	from Fair Price Shop (PDS System)	95	100	100.0	100	100
	Dung Cake	Own cattle	60	30	30.0	60	60
		Purchase from a shop	30	5	5.0	5	0
		Own collection from the open area	80	80	55.0	85	80

Table 1.9: Summary of Change in Indicators - Sample Households (Ultra Poor)

Non Poor		Jan-06	Jan-07	Jun-07	Jan-08	Dec-08
Per Capita Income per annum		3069	3233	4441	5841	6450
Per Capita Expenditure per annum		2462	2465	3013	3364	3650
		Percentage (%)				
Movable Assets	TV/Radio	6.7	6.7	6.7	66.7	80
	Furniture	20	26.7	26.7	93.3	95
	Agriculture implements	6.7	13.3	13.3	40	50
	Cattle Stock	20	20.0	20.0	46.7	50
	Motor Cycles	6.7	0.0	0.0	0	0
	Bicycles	46.7	53.3	53.3	73.3	75
Immovable Assets	Agriculture Land	26.7	26.7	26.7	46.7	50
	House Site	73.3	73.3	73.3	100	100
	Tube wells	0	0.0	0.0	0	0

Non Poor			Jan-06	Jan-07	Jun-07	Jan-08	Dec-08
Description of the service		Options / % of HH response	Percentage (%)				
Health Services	Frequency of the family members visiting a clinic/ hospital 1) Once a week, 2) Fortnightly, 3) once a month, 4) once in three month,	1	6.7	6.7	0.00	0	0
		2	13.3	0.0	6.70	6.7	5
		3	20	33.3	26.70	33.3	30
		4	20	33.3	73.30	60	65
	Reasons for avoiding the visit to clinic / hospital a) cannot afford, b) cannot find time c) Bad Road, d) Transport Cost	a	26.7	86.7	46.70	20	15
		b	33.3	13.3	20.00	0	0
		c	60	53.3	13.30	0	0
		d	0	6.7	6.70	0	0
	Mode used to reach hospital	Tractor	20	6.7	0.00	0	0
		Bullock Cart	66.7	40.0	40.00	66.7	65
		Jeep	6.7	20.0	20.00	0	5
		Bus	33.3	20.0	46.70	20	30
	Number of times failing to reach hospital in time (in the last 3 months) due to non availability of transport	Once	20	20.0	6.70	40	25
		Twice	20	6.7	13.30	0	0
		Thrice	0	0.0	0.00	0	0
		> thrice	0	0.0	0.00	0	0
	Availability of medical facilities (such as immunization; visit of health worker, etc.) to the family (Yes/ No)	Yes	40	86.7	100.00	100	100
		No	60	13.3	0.00	0	0
Levels of Education - modes used and fares paid			Percentage (%)				
Primary School (Up to 5th Class)	Mode of Transport (%)	Walk	93.3	100	100	100	100
	Main Transport related problem	Yes	0	0	0	0	0
Middle School (Up to 8th Class)	Mode of Transport (%)	Walk	86.7	80	100	80	90
		Bicycle	13.3	20	0	20	10
	Main Transport related problem (%)	No	40	80	100	80	90
		Bad Road/ TNA/ TCH	60	20	0	20	10
High School (Up to 10th Class)	Mode of Transport (%)	Walk	60	53.3	53.3	66.7	65
		Bicycle	40	46.7	46.7	33.3	35
	Main Transport related problem (%)	No	40	26.7	100	66.7	90
		Bad Road/ TNA/ TCH	60	73.3	0	33.3	10
Intermediate School (Up to 12th Class)	Mode of Transport (%)	Walk	46.7	33.3	33.3	0	0
		Bicycle	33.3	66.7	66.7	100	100
	Main Transport related problem (%)	No	53.3	33.3	100	100	100
		Bad Road/ TNA/ TCH	46.7	66.7	0	0	0
Environmental Aspects-Fuel			Percentage (%)				
	Firewood	Own Collection from any source	93.3	86.7	80.0	60	80
		Purchase from a shop	26.7	6.7	13.3	10	10
	Kerosene	from Fair Price Shop (PDS System)	100	93.3	93.3	70	80

Non Poor			Jan-06	Jan-07	Jun-07	Jan-08	Dec-08
	Dung Cake	Own cattle	53.3	20.0	13.3	20	25
		Purchase from a shop	33.3	20.0	6.7	5	5
		Own collection from the open area	73.3	60.0	73.3	70	80

From the above tables, in general, it can be observed that the per capita income and expenditure has increased. This has resulted in the ownership of the movable property increasing, while the ownership of immovable property has remained almost unchanged over the survey period. The accessibility to the facilities such as healthy and education has improved with availability of mechanized transport modes increasing, and the members of the surveyed households being able to use more often their personal modes such as bicycles and motor cycles.