EVALUATORY ASSESSMENT OF WORLD BANK'S POVERTY REDUCTION INTERVENTIONS IN RAJASTHAN

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Abstract

Poverty alleviation has always acquired priority in all government planning and policies. The Rajasthan government has also put many poverty reduction programs in place but no permanent dent on the upliftment of the downtrodden sections could be achieved. In year 2000, an entirely different poverty management strategy was adopted by government of Rajasthan in collaboration with World Bank in the name of District Poverty Initiatives Project (DPIP) with objectives of improving the economic opportunities, living standard and social status of BPL households of the selected seven poorest districts of Rajasthan. The present evaluatory study refers to one district of Rajasthan and attempts to examine whether or not the DPIP targeted BPL families of the district of Rajsamand acquired higher socio-economic status after the project got completed in the year 2007. Since interventions had aimed to deliver a wide range of benefits affecting different welfare dimensions of the poor, various welfare indices are constructed from more than 80 non-quantifiable variables. Application of two way ANOVA test and non-parametric Mann Witney U-test are applied for carrying out such evaluatory exercise.

The Background

Since 1960 various poverty alleviation programs were implemented by government of India and State governments to raise the poor households above poverty line. Unfortunately outcomes of these programs were not encouraging due to two fundamental reasons; first that there was very low `beneficiaries' involvement in planning, implementation and monitoring of poverty related programs and secondly; there was larger government presence in major administrative and technical matters at various levels. The backwardness of the Rajasthan State drew attention of the World Bank. The Bank through initiation of government of Rajasthan started a unique project named, District Poverty Initiatives Project (DPIP)[1] in the year 2000[2] with the underlying philosophy of participatory development of BPL families in the seven poorest districts of Rajasthan. Being a multidimensional poverty management strategy DPIP recognized that poverty has multidimensional characteristics. It is not confined to income poverty alone but extends into the social environment in which the poor strive for their existence. The project therefore aimed to improve the conditions of poor by generating employment opportunities through self propelled small projects to be implemented by poor themselves. The programme also directed to improve their capacities, skills and access to social and economic infrastructure, services and resources; and simultaneously on enhancement of civil social capital which in turn helped to raise income security to targeted poor families. In Rajsamand district in which DPIP was implemented Rs. 94 crores were spent on 3080 groups which covered 30673 targeted poor families to initiate their own selected economic activities called, 'sub-project activity'. These groups operated as common interest groups (CIGs) and were guided and supported by government and non-government organisation (NGOs) and many other private agencies.

Objective of the Study

This paper is an empirical study on the impact assessment of DPIP interventions on BPL families belonging to Rajsamand district of Rajasthan.

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1 DPIP also implemented in the States of Andhra Pradesh and Chattisgarh.

2 Initially the project was planned to be completed within five year period but due to certain reasons the project was extended for two more years and was completed in year 2007.

The purpose of present study is therefore to explore whether the DPIP targeted BPL families could acquire the socio-economic status equivalent to their fellow non poor residents of the district[3]. For analytical purpose this objective is expressed through the two hypotheses; one that, Interventions targeted and affected the different welfare dimensions of the beneficiary households uniformly and equally and consequently the second hypothesis which follows is; overall socio economic welfare status of poor targeted beneficiaries has now risen to that of non-targeted non poor families of Rajsamand district.

Sample Design : The Rajsamand district is divided into seven blocks and the project was implemented in all seven blocks. The population of every village consisted of targeted and non-targeted residents. While in the former, there was only one category of BPL targeted households but in the later there were two groups of households; non-targeted poor (BPL) and non-targeted non poor (APL). Four households were selected from each group of households of each village. Thus our sample consisted of 140 beneficiary BPL, 140 non-beneficiary BPL and 140 APL households of 35 villages of 7 blocks of the district under study. All 140 targeted BPL families were members of the common interest groups.

Data Collection: To test the two hypotheses statistically, primary data were collected on around 80 different variables. These variables were related to different aspects of socio-economic welfare like; educational facilities, health service awareness, income, assets ownership, sources of credit, women mobility, kinship network, participation in democratic formal/informal institutions and gender relations of the beneficiary and non-beneficiary households. Responses on non metric variables were collected through restricted openings type of questions. For instance to evaluate the educational facilities to households, restricted responses were obtained on participation in village educational committee, enrollment of children in schools, literacy level of adults. Similarly for evaluating access to health facilities information on adoption of family planning, availment of medial facilities provided by government, availability of doctors and immunization facilities for children were collected. In this way, questions were structured in such a way so as to extract all information needed for different dimensions which make up overall socio economic welfare of the households.

Data Analysis: Those inter related responses which reflected the similar dimension of the socio-economic welfare were conflated onto corresponding indicator of the dimension. This condensation of responses in different indices helped to make data analysis more precise and workable in handling the huge data.Condensation of variables into indices is done by assuming equal (unitary) weightage for each positive response falling under the relevant dimension. The index is constructed by dividing the total number of weighted positive responses by number of households and weightages allotted to all the responses or variables. The value so arrived is then indexed to a score of 100 so that the maximum value is 100 and minimum value is zero. In case of three indices (Gender Neutrality Index, Aggregative Social Capital Index and Credit Accessibility Index) non-unitary weightages are allotted to different responses. Hence the denominator figure got changed according. In this way different socio economic welfare indices of different dimensions are constructed which defined the aggregative welfare of the poor and non poor. The analytical part of the study is structured in three sections; the first one relates to validation of both the hypothesis by using two way ANOVA. On finding that interventions have not been successful enough to raise the welfare of the targeted poor, the first hypothesis is re-examined in the section two to explore in which dimension of welfare status the interventions have impacted favourably. Finally in the third part each welfare dimension of the targeted poor is positioned against the average district level score of the corresponding dimension of the non poor household to evaluate the unequal impact of interventions.

I Simultaneous Validation of Two Hypotheses

In this section statistical procedure of two way classification of 'Analysis of Variance' (ANOVA) is used on the three categories of households viz.; beneficiary BPL and non-beneficiary BPL and APL households (called treatment groups in ANOVA terminology) to examine equality among their overall welfare status constituted by different aspects of well being ranging from social to economic status; statistically known as 'blocking indicators'.

[3] The World Bank has already assessed the impacts of this project independently after the completion of the project and assigned 'moderately successful' rating for Rajasthan DPIP. However, the government of Rajasthan expressed dis-agreement to this rating and put on record the extent of achievements. This fact is published in the document of World Bank report No. ICR0000781, Implementation Credit Report on 'A Credit to the republic of India for a Rajasthan District Poverty Initiatives Project' dated June 20, 2008.

Through ANOVA our purpose is to examine significance of observed difference between the mean values of treatment groups and of blocking indicators. The averaged district index values based on the responses collected from all the three treatment groups on different socio economic welfare indicators are presented in table 1.

Table 1 : District Level Composite Indices of Beneficiary and Non-Beneficiary Households

Criterion/Factors/ Blocking Variables	Treatment Groups		
	Beneficiary BPL	Non Beneficiary	
		BPL	APL
1. Educational Facility Index	48.28	27.29	65.29
2. Health Awareness Index	50.36	41.61	53.66
3. Gender Neutrality Index	15.45	15.27	13.84
4. Women Mobility Index	45.00	40.54	47.14
5. Kinship Network Index	38.41	56.21	44.39
6. Participation in Formal/informal Democratic Institution Index	23.00	13.00	29.00
7. Aggregative Social Capital Index*	10.44	9.01	9.86
8. Credit Accessibility Index	17.38	7.62	25.24
9. Asset Ownership Index	37.67	16.15	45.34
10. Household Perception Index	33.69	19.40	37.97

* DPIP strategy proposed to enhance two types of capital; civil and social. Civil capital includes common values, norms, networks and association among households to be able to work together and achieve common goal of the community. Such capital indicates in building village community to stand up in times of crisis. Social (government) capital refers to government institutions that influence poor person's ability to co-operate for mutual benefit and facilitate a socially inclusive process.

The two hypotheses tested simultaneously are:

Row wise : H_0 : All the dimensions of the targeted poor are affected equally and uniformly by the interventions.[4]

Column wise : H_0 : The aggregative welfare status of targeted poor household is now equivalent to that of non-poor (APL) households.

The results of ANOVA two way classifications are summarized in table 2.

Table 2: Two Way ANOVA Table

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	Test Statistics
Column wise Analysis (Between treatment group)	847.03	2	423.51	$F_{treatment} = \frac{423.51}{61.28}$ $F_{(2,18)} = 6.911$
Row wise Analysis (Between Indicators of Dimensions)	5021.55	9	557.95	$F_{block} = \frac{557.95}{61.28}$ $F_{(9,18)} = 9.104$
Residual Error	1103.05	18	61.28	--

The values of two F-statistic(s) obtained are 6.911 in case of testing the equality of aggregative welfare status amongst the three groups of households while the other F-value is 9.104, which tests the impact equality of interventions on the ten different dimensions of the welfare. Both the F-values; the one with degree of freedom of (2, 18) and the other with (9, 18) are found to lie in the five percent critical region of F-distribution. In other words; on the basis of evidence found from the sample of the study it may be inferred that neither the welfare status amongst the three categories of households is equivalent nor is the influence of interventions appears to have been uniform on the different dimensions of the aggregative welfare of the three groups of the households.

[4] Externalities (i.e. favourable and unfavourable spillover effects) of DPIP interventions may have also flowed to the non-beneficiary group of households, specially in case of enhancement of civil social capital. But this shall not vitiate the inferences drawn from the inter group aggregative welfare comparisons because spillover effects are assumed to have affected both the non beneficiary groups equally. It does not matter whether higher (or lower) level of welfare status is acquired by the group through own efforts or spillover effects.

II Validation of First Hypothesis

The above statistical analysis has showed that DPIP interventions have neither been successful to raise the aggregate level of welfare status of targeted BPL households to the level equivalent to that of none targeted non poor families of the district nor is the impact of interventions uniform on the different dimensions. Since the aggregative welfare status of the families is defined through ten different dimensions, there might be situations when targeted interventions might have concentrated (unintentionally) and impacted more on few of the welfare dimensions than others and thereby achieving better outcomes in those dimensions only. As such, it was thought to explore that of the ten composite indices of the aggregate welfare status which of the dimension of the targeted households are affected more favorably[5]. This is major purpose of this section. For testing statistically inter indices differences between the two categories of households non-parametric test of type of two independent samples is used[6]. This is attempted by examining all the dimensions and then by testing index of each dimension of the beneficiary targeted households against the index of same dimension of non-targeted APL households.

Application of Mann Whitney U-Test: Through the application of Mann Whitney U-test it is examined whether the observed differences in the composite indices of the welfare dimensions of targeted BPL households and non targeted APL households are statistically significant. Acceptance of null hypothesis would justify inferring that targeted interventions had successfully raised the development or accessibility of different service oriented dimensions for the beneficiary poor (BPL) at par or more than the corresponding dimension of non poor (APL) households. This exercise is attempted considering block wise welfare dimension to know in which welfare dimension targeted BPL still lags behind or achieves higher position corresponding to APL households. Table 3 provides the block wise scores of composite indices for each welfare dimension of targeted and non-targeted households.

Table 3 : Block wise Indices of Rajsamand District

Block of Rajsamand District	Educational Facilities Index		Health Awareness Index		Gender Neutrality Index		Women Mobility Index		Kinship Network Index		Participation in Democratic Formal/Informal Institution Index		Aggregative Social Capital Index		Credit Accessibility Index		Asset Ownership Index		Households' perception Index	
	Category*		Category		Category		Category		Category		Category		Category		Category		Category		Category	
	A	C	A	C	A	C	A	C	A	C	A	C	A	C	A	C	A	C	A	C
Amet	47.00	64.00	51.88	58.13	13.96	12.29	28.75	31.25	36.54	42.30	17.00	21.00	50.90	49.10	10.00	16.67	30.22	35.22	32.50	37.50
Bhim	46.00	68.00	50.00	50.63	11.67	12.71	32.50	36.25	34.23	36.15	18.00	23.00	49.55	47.25	8.33	23.38	32.61	36.96	30.00	34.17
Deogarh	43.00	54.00	46.88	47.50	13.33	12.71	38.75	43.75	35.38	40.38	19.00	30.00	48.65	46.80	11.67	28.33	34.13	42.17	31.67	35.83
Khamnor	61.00	73.00	56.88	58.75	18.96]	16.04	56.20	56.25	43.08	58.08	34.00	41.00	59.55	55.90	28.33	31.67	45.65	48.26	37.50	48.83
Kumbhalgarh	46.00	61.00	48.13	45.88	16.88	15.21	52.20	55.00	38.46	44.23	27.00	33.00	51.37	50.00	21.67	30.00	37.61	44.78	30.83	36.67
Railmagra	41.00	63.00	43.13	51.25	13.75	11.25	42.50	43.75	37.67	42.69	17.00	20.00	48.20	45.00	10.00	13.33	40.43	47.39	29.17	33.33
Rajsamand	54.00	74.00	55.63	62.50	19.58	16.65	63.75	63.75	43.46	46.92	29.00	36.00	57.25	50.90	31.67	33.33	43.04	62.61	44.17	47.50

Category A *: Beneficiary BPL households and* **Category C** *: Non-beneficiary APL households*

[5] The DPIP interventions were meant for raising the socio-economic status of BPL families to the average level of APL. As such any comparison between the two groups of BPL; one which are beneficiary and the other who are non beneficiary would not be worthwhile. Therefore, it was thought appropriate to make statistical comparisons only between two categories; beneficiary BPL and non-beneficiary APL.

[6] One would have preferred to use student t-test the inter indices differences between the two categories of households. But due to stringent assumptions underlying t-test about the size of parent population and coordinal characteristic of the data; non parametric is more appropriate test.

The null hypothesis tested in case of each dimension and the corresponding results of Mann Whitney U-Test are presented in table 4.

Table 4 : Results of Mann Whitney U-Test

Type of Index	Null Hypothesis tested	Value of U-Statistic	p-value	Whether null hypothesis is accepted or rejected on 5% level of significance
1. Educational Facility Index	Access of education facilities to the targeted households is similar to that of APL households.	2	0.0012	Rejected
2. Health Awareness Index	Awareness of health services to BPL beneficiary households is same as to the APL households.	17	0.1914	Accepted
3. Gender Neutrality Index	Gender indifference in decision making in BPL beneficiaries households is similar as in the APL households.	15	0.1297	Accepted
4. Women Mobility Index	Women mobility to different places in targeted category is similar to that of non targeted non poor	21	0.3552	Accepted
5. Kinship Network Index	Network and cooperation amongst the kinds of targeted poor is same as to non targeted non-poor.	10	0.0364	Rejected
6. Participation in Democratic Institution Index	Democratic participation is similar between the beneficiary and non- beneficiary households.	10	0.0364	Rejected
7. Aggregative Social Capital Index	The aggregative social capital index of targeted poor is similar to that of non targeted APL households.	14	0.1043	Accepted
8. Credit Accessibility Index	Access to the formal sources of credit is similar between the two categories of households.	10	0.0364	Rejected
9. Asset Ownership Index	Asset holdings do not differ between poor targeted and non poor households.	11	0.0487	Rejected
10. Household Perception Index	Self perseverance about the welfare status as revealed by BPL and APL households are similar	11	0.0487	Rejected

Table 5 is extensions of table 4 wherein the different dimension scores are categorized into two columns each providing the status of null hypothesis. The dimension for which hypothesis is rejected/accepted highlights different inferences and outcomes of the interventions as per geographical residence of the beneficiary households vis-a-vis their counterpart APL households.

Table 5: Summary of Results Null Hypothesis

Indices on which Null Hypothesis is Accepted	Indices on which Null Hypothesis is Rejected
1. Health Awareness Index 2. Gender Neutrality Index 3. Women Mobility Index 4. Aggregative Social Capital Index	1. Educational Facility Index 2. Kinship Network Index 3. Participation in Democratic (formal/ informal) Institution Index 4. Credit Accessibility Index 5. Asset Ownership Index 6. Household Perception Index

It is clear from table 5 that the null hypothesis is found to be accepted on four composite indices. These indices can be said to be rough measures of the degree to which women had acquired autonomy in moving out on their own and larger role and control in decision making in their households, village activities and health affairs. As such the poor households seem to have acquired status equivalent to their contemporary APL households on this account. Also their access to health facilities and awareness and right to entitlements have also been increased. On the other hand, rejection of hypothesis reveals that the low accessibility to educational facility, weak kinship and lesser participation in democratic institutions like gram sabha reveal that interventions could bring little improvement in voicelessness and powerlessness of the poor. The accessibility to credit facilities is far from their reach and the role of poor in democratic institution still remains remote. Above all, poor themselves do not appear to perceive any perceptible positive change in their own welfare status.

III Positioning of Welfare Dimensions

Hypothesis testing is primarily based on acceptance or rejection of equality between two mean values of distributions put under test. This in no case be assumed or inferred that every observational value of the two distributions are equal. This extended simple statistical argument helps to go beyond the inferences drawn by non-parametric hypothesis testing as summarized in table 5.

As shown in table 5, though null hypothesis is not rejected on testing four index scores, it simply implies that in statistical terminology, the observed (on calculated) mean differences between two categories of households on these four welfare dimensions should not be regarded as significant. Rather it is to be inferred that their average score values across the seven blocks of the district are statistically not unequal. However, index scores are likely to differ blockwise (see table 3). Positioning of each block on every welfare dimension as shown in Figure 1 highlights those dimensions in which interventions achieved above (or below) average outcomes. As per table 5, four welfare dimensions on which null hypothesis has not been rejected are health, gender neutrality, women mobility and social capital. On the other table 6 (based on figure 1) describes the names of those blocks of the district of our study whose scores are higher (or lower) then the district average level score.

Table 6 : Positions of Blocks Above (or Below) District Average Levels

Name of Welfare dimension	Blocks Above District Avg. levels	Blocks Below District Average levels
1. Health Awareness Index	Khamnor, Rajsamand, Amet	Bhim, Deogarh, Kumbhalgarh, Railmagra
2. Gender Neutrality Index	Khamnor, Rajsamand	Amet, Bhim, Deogarph, Kumbhalgarh, Railmagra
3. Women Mobility Index	Khamnor, Rajsamand, Kumbhalgarh	Amet, Bhim, Deogarph, Railmagra
4. Aggregative Social Capital Index	Khamnor, Rajsamand, Kumbhalgarh	Amet, Bhim, Deogarph, Railmagra

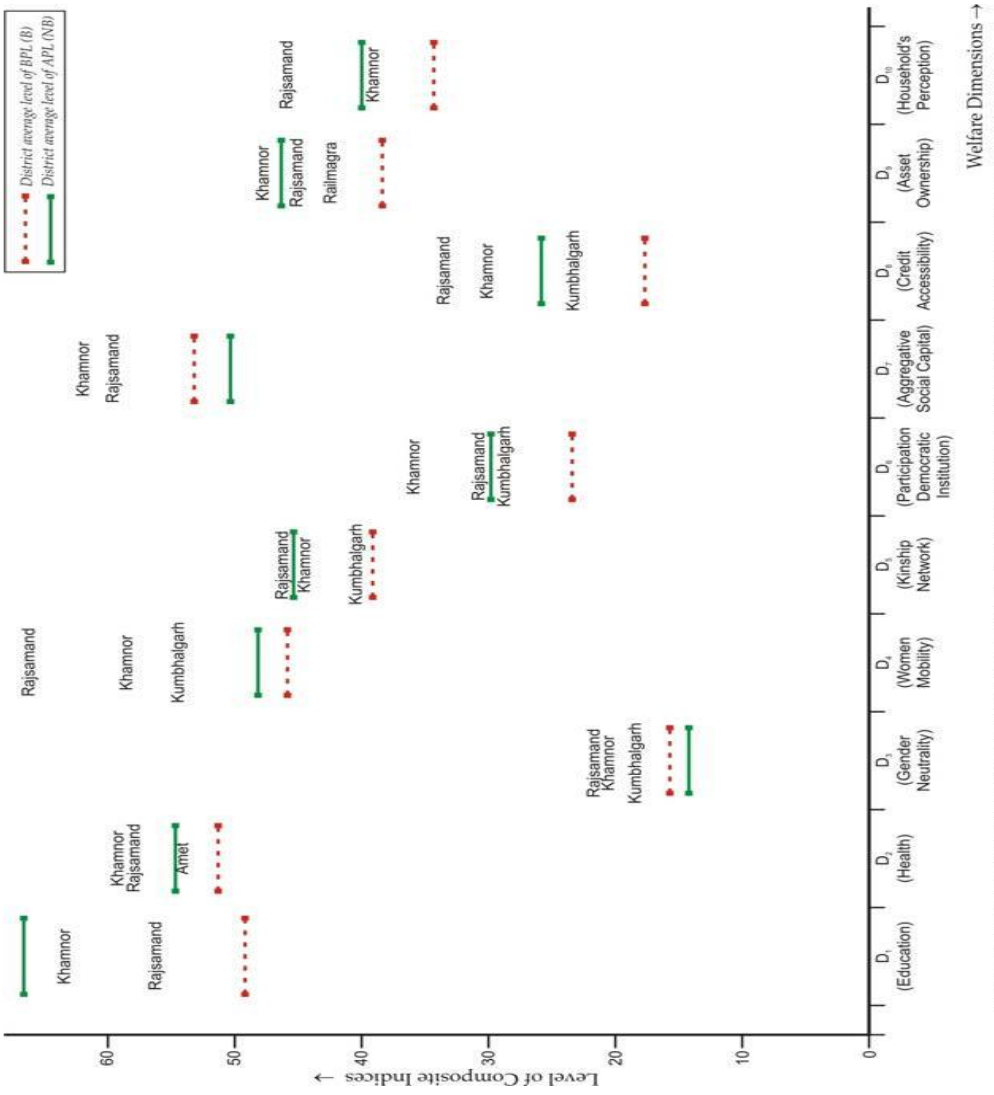

Figure 1: Positioning of Blocks on different welfare dimensions of beneficiary households

One may therefore, logically conclude that interventions have impacted most favourably on the four dimensions of two blocks (Khamnor and Rajsamand) and hence the gap that existed between targeted poor and non poor is fully plugged. This is because the score values of these four dimensions (health, gender neutrality, women mobility and social capital) along with two other dimensions (participation in democratic institutions and credit accessibility) of targeted poor are not only above district average level of own category but also above the district average level of the APL households. The rejection of null hypothesis in case of remaining six dimensions is due to their lower score values in the blocks which in turn push the mean values at district level so low that the observed differences between poor and non poor becomes highly significant. This leads us to conclude that there had been differential impact of interventions across the seven blocks of Rajsamand district. Nevertheless, with the implementation of DPIP the object of raising the socio-economic status of the BPL households of at least two blocks has been undoubtedly achieved.

Conclusion

Problems of poverty and inequalities still remain social sores and painful scars even after 60 years of independence. Bollywood films *Peepli (live)* and *Slumdog Millionaire* tend to appear hardcore realities in the face of higher growth achievements. We grope with the number of ideas and programmes but the objects of reduction in poverty and income inequalities appear insurmountable. Even since the independence, central and state governments are consistently targeting the above two objectives through different programmes and projects with major focus on income poverty. Recognizing the multidimensional character of the poverty by the economists specially during the last decade; World Bank in consultation with three Indian states pursued this unique anti-poverty intervention which was based on participation of beneficiaries and simultaneously made direct impact on their social environment than removal of bear income poverty of the BPL households. This programme was run under the name of DPIP on which total cost incurred was Rs. 610 crore; 20 percent of which was borne by the state government and the beneficiaries together.

The premises of DPIP interventions were essentially laudable because it made paradigm shift from `supply driven' to 'demand driven' approach with a vision of improving the quality of life and decision making capabilities of the rural masses in all dimensions. This project was novel in a sense that it involved non-government organizations, and other private agencies in the implementations of the interventions without any political hindrances and interferences. The base line survey and final impact was the responsibility of the experts appointed by government of Rajasthan[7]. Unfortunately World Bank's own evaluatory report[8] was not in consonance with government's views. The overall outcomes of the project as per World Bank were not upto the mark. This project, for being based on entirely new approach with NGOs, private agencies and beneficiaries operating hand in hand with the government for the first time, non satisfactory results were mainly due to virtually having no experience of working together in such type of programmes.

The present paper is mainly concerned with the evaluatory analysis of the targeted poor families of Rajsamand District of Rajasthan. Its findings, that not all the welfare dimensions of the poor households are found to have been uniformly, equally and favourably impacted by the DPIP interventions, are based on our sample survey. The data was collected from 420 households (covering BPL and APL families) of 35 villages of only one district out of seven districts of Rajasthan in which DPIP was implemented. The outcomes of the project might not have been up to the mark as per the World Bank's report, nonetheless this project pioneered to prepare a governance and accountability action plan (GAAP) which was based on "Right to Information". This action plan developed a complaints handling system where services of local journalists were used to scan the local newspapers to bring out issues and stories related to project as an independent check. This made the project entirely novel and forward looking for a government programme.

[7] Institute of Development Studies, Jaipur issued Base Line Survey in year 2002 and Final Impact Assessment Report in year 2007.

[8] Initially the project was planned to be completed within five year period but due to certain reasons the project was extended for two more years and was completed in year 2007.