

Document of
The World Bank

FOR OFFICIAL USE ONLY

Report No: 25232

IMPLEMENTATION COMPLETION REPORT
(IDA-26110)

ON A

CREDIT

IN THE AMOUNT OF US\$ 117.8 MILLION

TO THE GOVERNMENT OF

INDIA

FOR A CATARACT BLINDNESS CONTROL PROJECT

12/17/2002

This document has a restricted distribution and may be used by recipients only in the performance of their official duties. Its contents may not otherwise be disclosed without World Bank authorization.

CURRENCY EQUIVALENTS

(Exchange Rate Effective June 30, 2002)

Currency Unit = Rupee
Rupee 1.00 = US\$ 0.49
US\$ 1.00 = Rupee 49.00

FISCAL YEAR

April 1 March 31

ABBREVIATIONS AND ACRONYMS

AMC	-	Annual Maintenance Contract
CNA	-	Communications Needs Assessment
DBCS	-	District Blindness Control Societies
DHS	-	Directorate of Health Services
DPM	-	District Program Manager
ECCE	-	Extracapsular Cataract Extraction
EFC	-	Expenditure Finance Committee
GOI	-	Government of India
HSCC	-	Hospitals Services Consultancy Co-operation
ICCE	-	Intracapsular Cataract Extraction
IDA	-	International Development Association
IEC	-	Information, Education and Communication
IOL	-	Intraocular Lens
M&E	-	Monitoring and Evaluation
MOHFW	-	Ministry of Health and Family Welfare
MTR	-	Mid-term Review
NGO	-	Non-government Organization
NPCB	-	National Program for the Control of Blindness
NPMC	-	National Program Management Cell
OT	-	Operation Theatre
PHC	-	Primary Health Center
SBCS	-	State Blindness Control Societies
WHO	-	World Health Organization

Vice President:	Mieko Nishimizu
Country Manager/Director:	Michael F. Carter
Sector Manager/Director:	Charles C. Griffin
Task Team Leader/Task Manager:	Suneeta Singh

**INDIA
BLINDNESS CONTROL**

CONTENTS

	Page No.
1. Project Data	1
2. Principal Performance Ratings	1
3. Assessment of Development Objective and Design, and of Quality at Entry	2
4. Achievement of Objective and Outputs	4
5. Major Factors Affecting Implementation and Outcome	10
6. Sustainability	12
7. Bank and Borrower Performance	13
8. Lessons Learned	15
9. Partner Comments	17
10. Additional Information	28
Annex 1. Key Performance Indicators/Log Frame Matrix	31
Annex 2. Project Costs and Financing	34
Annex 3. Economic Costs and Benefits	36
Annex 4. Bank Inputs	37
Annex 5. Ratings for Achievement of Objectives/Outputs of Components	40
Annex 6. Ratings of Bank and Borrower Performance	41
Annex 7. List of Supporting Documents	42

<i>Project ID:</i> P010455	<i>Project Name:</i> BLINDNESS CONTROL
<i>Team Leader:</i> Suneeta Singh	<i>TL Unit:</i> SASHD
<i>ICR Type:</i> Core ICR	<i>Report Date:</i> December 23, 2002

1. Project Data

Name: BLINDNESS CONTROL *L/C/TF Number:* IDA-26110
Country/Department: INDIA *Region:* South Asia Regional Office
Sector/subsector: Health (95%); Central government administration (3%); Sub-national government administration (2%)

KEY DATES

<i>PCD:</i> 07/09/1992	<i>Effective:</i> <i>Original</i>	<i>Revised/Actual</i>
<i>Appraisal:</i> 01/27/1994	<i>MTR:</i>	01/31/1995
<i>Approval:</i> 05/12/1994	<i>Closing:</i>	09/01/1998
		06/30/2002

Borrower/Implementing Agency: GOI/MOHFW
Other Partners:

STAFF	Current	At Appraisal
<i>Vice President:</i>	Mieko Nishimizu	D. Joseph Wood
<i>Country Manager:</i>	Michael F. Carter	Heinz Vergin
<i>Sector Manager:</i>	Charles C. Griffin	Richard L. Skolnik
<i>Team Leader at ICR:</i>	Suneeta Singh	Maria Donoso Clark
<i>ICR Primary Author:</i>	Shreelata Rao Seshadri	

2. Principal Performance Ratings

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HL=Highly Likely, L=Likely, UN=Unlikely, HUN=Highly Unlikely, HU=Highly Unsatisfactory, H=High, SU=Substantial, M=Modest, N=Negligible)

Outcome: HS
Sustainability: HL
Institutional Development Impact: SU
Bank Performance: S
Borrower Performance: S

Quality at Entry: QAG (if available) ICR
S
Project at Risk at Any Time: No

3. Assessment of Development Objective and Design, and of Quality at Entry

3.1 Original Objective:

The Cataract Blindness Control Project, made Effective on January 31, 1995, provided a Credit of SDR 85.3 million (USD 117.8 million equivalent) to the Government of India (GOI). The objectives of the Project were to: (i) support India's efforts to upgrade the quality of cataract surgery; (ii) expand the coverage of India's National Program for the Control of Blindness (NPCB) to underprivileged areas with special attention to women, tribal and isolated areas; and (iii) assist in the reduction of prevalence of cataract blindness by more than 50% and bilateral blindness incidence by more than 30% in the participating states. Seven states which accounted for over 70% of cataract blindness in India were selected for the project. These were Andhra Pradesh, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. The seven-year project sought to eliminate the backlog of cases by conducting more than 11 million surgeries.

The NPCB had been launched in 1976 by the Ministry of Health and Family Welfare, GOI as a vertical program. It was designed to provide comprehensive eye care at primary, secondary and tertiary levels, addressing in particular the problem of age-related cataract blindness. While other forms of cataract blindness do occur (such as congenital, juvenile, cortical and nuclear), none of these constitutes a public health problem. In 1983, the National Health Policy of India identified blindness as an important public health problem and set a target for the reduction in blindness prevalence rate from 1.3 per thousand to 0.3 per thousand.

In the early 1990s, it was estimated that more than a third of the world's total blind population of 35 million lived in India, reflecting both the country's large population size and the higher than average prevalence of cataract blindness. Of these, about 80%, or more than 10 million were blind from bilateral cataract. Another 10 million or so had unilateral cataract. India had a greater prevalence of cataract as a cause of blindness at 80% than was the case worldwide (50%). Not only that, almost half (45%) of the cases in India occurred before 60 years of age, while globally, cataracts occur for the most part after the age of 60. It was also realized that prevalence of cataract among women was especially high due to low social and economic access of women to health care services. Due to high prevalence and early onset of cataract blindness, it has been estimated that 2.4 million disability adjusted life years were lost annually to cataract blindness in India in the early 1990s. At the time, India's capacity to carry out cataract surgery was merely 1.5 million operations annually, many of these with unsatisfactory results.

Sight restoration in cases of cataract is a two-step process involving surgical removal of the lens of the eye and correction of the resulting refractive error. At the time of preparation, the preferred surgical method was Intracapsular Cataract Extraction (ICCE). This is suitable only for individuals with bilateral blindness as the refractive error caused by the surgery requires spectacles of such high power that double vision results, if applied to only one eye. The project sought to shift to the more sophisticated Extracapsular Cataract Extraction (ECCE) with intraocular lens (IOL) implantation, which results in more "normal" vision, and may even eliminate the need for spectacles altogether.

Given the epidemiological, management, technical and social situation in India in the early 1990s

with regard to cataract surgery, the objectives of the project were appropriate. The Project was consistent with the Country Assistance Strategy to (i) reduce as quickly as possible the burden of key endemic diseases such as leprosy, tuberculosis, blindness and malaria; and (ii) strengthen health systems to provide effective and efficient primary health care over the medium term. IDA's involvement in the cataract blindness control program was justified on several grounds: (i) the project would direct resources to one of the most cost-effective health interventions on a sound technical and institutional basis; (ii) the project was consistent with IDA's strategy of reducing inequalities by improving access to cataract surgery for the poor and marginalized; and (iii) IDA had a comparative advantage in serving as a catalyst in upgrading the cataract blindness control program through its access to high level international experts and global experience. A large part of Bank involvement in the health sector in India had so far focused on the family welfare sector with the India Population Projects. The Project provided the Bank an opportunity to reform the blindness control sector in India and opened the door for Bank involvement in the public health sector.

3.2 Revised Objective:

Not applicable.

3.3 Original Components:

The Project included four components:

- (a) **Enhancing quality of eye care and expanding service delivery** (USD 118.8 million; 84% of the Credit) through (i) improving quality control for service delivery; (ii) strengthening service capacity and improving efficiency; (iii) regularizing the organization of camps; (iv) creating an enabling environment for nonprofit organizations and private sector participation; and (v) expansion of coverage to tribal and remote rural areas;
- (b) **Developing human resources for eye care** (USD 5.0 million; 4% of the Credit) through (i) training of ophthalmologists; (ii) training of allied personnel such as operating theater personnel; (iii) training of ophthalmic assistants and/or health assistants; and (iv) management training.
- (c) **Promoting outreach activities and public awareness** (USD 10.0 million; 7% of the Credit) through (i) outreach and screening camps organized by NGOs and government ophthalmic teams with community participation; (ii) screening routines carried out by ophthalmic and health assistants as part of their general duties; (iii) involvement of "satisfied customers" and "temporary outreach workers" in outreach campaigns; (iv) promotion of the program through schools by creating awareness among teachers and students; and (v) facilitating transportation and compensation to patients from remote areas to facilitate access to services. Such efforts would be complemented by an IEC campaign that would (i) develop a recognizable identity for the NPCB; (ii) develop community based messages; and (iii) design media and communications packages and strategies to address deterrents to surgery ; and
- (d) **Building institutional capacity** (USD 8.0 million; 6% of the Credit) through (i) developing institutional capacity for eye care management at the central, state and district levels; (ii) developing collaborative mechanisms for cooperation between the government and private/voluntary sectors; (iii) introducing monitoring and feedback mechanisms to facilitate implementation and maintain quality control; and (iv) building institutional capacity for human resources development.

About USD 37 million (about 25% of the Credit) were set aside for funding service delivery through NGOs and the private sector. Civil works and equipment and supplies accounted for USD 13.34 million (about 12% of the Credit) and USD 10.03 million (about 7% of the Credit) respectively. Almost USD 5 million (about 4% of the Credit) was set aside for provision of spectacles for post-operative visual correction. About USD 2.25 million (about 2% of the Credit) was allocated for training of different categories of health personnel. These components were appropriate to meet the objectives of the Project.

3.4 Revised Components:

In March 2001, an additional component was added to the Project for the purpose of restoration of assets lost due to the Gujarat earthquake. The component was funded through reallocation of savings (USD 20m) identified in the Project. These monies were fully disbursed, nor did they in any way hinder full implementation of other Project components.

3.5 Quality at Entry:

Satisfactory. The Project scores high in addressing an important health issue facing India at the time, and in being responsive to the Borrower's priorities. Given the huge social and economic loss resulting from cataract blindness, and the government's commitment to addressing the problem, it was clearly a priority area for intervention. In terms of technical quality of the Project design, and the contribution of the Project at the policy and operational levels, also, the Project scores high. The Project aimed to replace outdated methods with the latest technology, and deliver it to those in most need of cataract surgery in a cost-effective manner.

Many of the key issues identified as being constraints in the implementation of the NPCB were addressed through the introduction of new policies, procedures, and standards under the Project. These included: (i) the organizational restructuring of NPCB at the center, with delegation of authority and accountability for implementation at the district level through District Blindness Control Societies (DBCS) and subsequently, State Blindness Control Societies (SBCS); (ii) the adoption of new technical standards for patient screening, diagnosis, surgical procedures, and follow-up; (iii) the provision of modern equipment and facilities at the grassroots level to ensure high quality surgery; (iv) the establishment of mechanisms for NGO/private sector collaboration in the Project, and new fee schedules for services by nongovernmental providers; (v) the adoption of targeted strategies to facilitate access for disadvantaged groups, particularly women and tribals; and (vi) the agreement on a new approach to resource allocation based on "packages of inputs", i.e. combination of staffing, equipment, and supplies needed for quality service delivery in a coordinated fashion.

4. Achievement of Objective and Outputs

4.1 Outcome/achievement of objective:

Satisfactory. The achievement of development objectives of the Project is highly satisfactory. Implementation progress of the Project is fully satisfactory. Specific achievements include:

Improving the quality of cataract surgery: Demand for IOL surgery and the proportion of IOL surgeries continue to grow: the increase in ECCE/IOL surgeries as a percentage of all cataract surgeries in the Project states ranges from 31%-91% in 2001, compared to less than 3% at the

start of the Project. This increase has been facilitated by the intensive training program which has increased the technical skills of ophthalmic surgeons in doing IOL surgery, and substantial strengthening of infrastructure, including equipment, for conducting high quality cataract surgeries. Camp surgeries, which were often responsible for poor visual outcomes, have declined; surgeries in fixed facilities have grown steadily.

Expanding service delivery to underserved populations: Routine performance data from the states indicate that women and tribals comprise more than 50% of the number of operated cases, an important objective of the Project. Operationalizing and fully utilizing the infrastructure developed in tribal areas has been identified by MOHFW and the states as a priority. Mechanisms to strengthen involvement of the private/NGO sector in service delivery and outreach to patients in peripheral areas were put in place.

Reducing the backlog of cataract surgeries: A cumulative total of 15.35 million cataract operations have been performed under the Project, compared to a target of 11.03 million. The backlog in the Project states in 1994 had been estimated at about 7.0 million cases. The number of cataract operations per 100,000 population has grown to an average of 396 in the Project states compared to a target of 400 per 100,000. The shortfall is largely due to under-performance in Orissa (235) and Uttar Pradesh (323). Sentinel Surveillance Centers (23), which monitor the prevalence of cataract blindness and enable an appropriate response, have been established under the project.

In addition, institutional capacity for program management has been strengthened overall. Management arrangements have been put in place at the state and district levels to allow for decentralized implementation of the program, responsive to local conditions and needs. Evaluation tools have been developed and utilized by the National Program Management Cell to guide and facilitate program implementation.

A dramatic, albeit unforeseen outcome, has been the expansion of manufacturing capacity for high quality ophthalmic materials such as IOL and suture material for surgery, which is now being exported by the country.

Details of the achievements of the NPCB are given in the sections that follow.

4.2 Outputs by components:

Component 1: Enhancing quality of eye care and expanding service delivery. The primary focus of this component was to shift the emphasis of the Project away from quantitative targets towards qualitative improvements in surgical and post-surgical care. Specific objectives included:

Improving quality control for service delivery: Norms and standards for eye care were developed and disseminated. The guidelines included standard protocols for pre-operative examination, cataract surgery, and post-operative care. Surgical outcomes have improved as a result of the provision of well-equipped operation theaters and trained surgeons: post-operative visual acuity >3/60 following ICCE surgery has improved from 75% before 1994 to 82% between 1999-2002, while that for IOL has improved from 84% to 95% in the same period. Post-operative visual

acuity >6/60 in 2002 was 66% for ICCE surgery and 83% for IOL. The Mid-Term Review (MTR) indicated that post-operative follow-up needed strengthening since poor visual outcomes after surgery continued to be high. This was due mainly to failure to prescribe appropriate spectacles after performing refraction 4-6 weeks after surgery; only 20% of patients were provided this service. Steps were taken to improve follow-up, such as making the full release of grants to NGOs contingent on follow-up. However, post-operative follow-up will require continued monitoring.

Strengthening service capacity and improving efficiency: High quality goods and equipment were procured, including operating microscopes, intraocular lenses, and ophthalmic sutures. Operations are now performed in newly constructed or renovated dedicated eye operation theaters (OTs), which provide a conducive, sterile surgical environment that would facilitate high quality cataract surgery with IOL implantation. New OTs (301) and eye wards (273) have been constructed under the Project, largely completing the planned civil works program in all the Project states. The small shortfall in the civil works targets is due to non-completion of works in one state, Madhya Pradesh. In addition, 45 medical colleges, 259 district hospitals, 254 district mobile units and 3281 primary health centers were provided with eye care equipment by the Project, in excess of what had been targeted in each category. The latest equipment, including 747 operating microscopes, 600 slit lamps, 821 A-Scans, 344 AVUs, 681 keratometers, and 178 Yag lasers, was procured to ensure enhanced quality of surgery.

Findings of the Rapid Assessment (2001-2002) indicate that the Project coverage of persons requiring cataract surgery has increased to about 70%. In the surveyed districts, the number of IOL surgeries increased from 3% before 1994 to about 42% (cumulative) between 1999-2002. Overall, based on routine reporting, the number of cataract surgeries has been steadily increasing, with the increase in ECCE/IOL surgeries ranging in different states from 15-65% in 1998-99 to 44-91% in 2001-02. Overall, the prevalence of cataract blindness declined from 1.49% at baseline to 1.1% at endline: a decline of 26%.

Regularizing the organization of camps: The NPCB shifted from the camp approach that had earlier been pioneered by the program to a facility-based approach. The camp approach was appropriate for conventional ICCE cataract surgery, and had the advantage of increasing access for patients in remote, rural areas. However, poor visual outcomes among patients operated at camps led to a shift to IOL surgery and it became necessary to provide a sterile OT environment and special equipment for surgery. The outreach function of the camp was retained, however, by organizing regular screening camps to identify operable cataracts, which were later transported to fixed facilities for surgery. Data indicates that in 2000-2001, only about 8% of conventional surgeries continue to take place at camps, mainly in remote areas, down from about 11% in 1999-2000. The rest take place in fixed facilities: 17% in government facilities, 37% in NGO facilities and about 38% in private facilities. For the most part, the shift to IOL surgeries in fixed facilities has become entrenched.

Creating an enabling environment for nonprofit organizations and private sector participation: NGOs had been involved in service delivery to improve outreach even before the start of the Project. Under the Project, the NPCB sought to expand their coverage by providing field-based

NGOs and private sector partners recurrent and nonrecurring grants to assist the government in reducing the backlog of cataract blindness. The long-term objective of this component was to create sustainable capacity for eye care in remote areas. The scheme involved provision of nonrecurring grant for civil works, equipment, vehicles and furnishings; and recurrent grants depending on services provided by the NGO.

Expansion of coverage to tribal and remote rural areas: A total of 30 NGOs were supported with a one-time nonrecurring grant to provide services in underserved areas. A detailed assessment of the NGO contribution has been undertaken as one of the Project's end-line studies. That study, the beneficiary assessment study (August 2002) and the cost-benefit analysis of the Project (July 2002), indicate that the most cost-effective option for cataract surgery is surgery at an NGO hospital after NGO organized screening camps: cost per benefit in this option is the lowest at INR 1,297, as compared the cost in a private facility at INR 5,440. NGOs contributed substantially to service provision in peripheral areas by organizing screening eye camps, school eye health programs and village volunteer programs; as well as curative care at their base hospital, and preventive and rehabilitative care. IEC programs were also organized by the NGOs. It is estimated that almost 95% of cataract surgeries in Tamil Nadu, for example, were conducted under the mandate of an NGO, the Aravind Eye Hospital. Similarly, in Andhra Pradesh, about 32% of cataract surgeries were conducted by NGOs. As indicated above, over a third of all IOL surgeries today, take place in NGO facilities.

Component 2: Developing human resources for eye care. An important objective of the Project was to develop the necessary human resources to meet the rising demand for IOL surgery. IOL technology was introduced on a large scale for the first time by the Project. In the 1990s, when the Project was launched, it was available only in a few tertiary hospitals. Two specific risks had been envisaged during Project preparation in this context: (i) that entrenched practices would delay the transition to the new approach to cataract surgery; and (ii) emphasis on ECCE/IOL training would skew the program towards tertiary and secondary facilities, at the expense of peripheral areas. However, these risks were addressed as follows: (i) participatory workshops were held to ensure endorsement of the new technologies by all stakeholders; and (ii) service delivery was strengthened first in peripheral areas through the training of NGO partners. In addition, professional ophthalmic associations were involved in the training program. The capacity building program was thus able, in a period of three years, to develop expertise in both the public and private sector to a level where ECCE/IOL has become the preferred surgery across all states.

During the course of the Project, 100 faculty in ophthalmic hospitals have been trained as trainers, and 842 eye surgeons have been trained in IOL surgery, as against a revised Project target of 817. Other categories of manpower such as PHC Medical Officers, paramedical ophthalmic assistants, and health workers are being trained as per GOI guidelines. Revised norms for training of various categories of personnel have been issued by the National Program Management Cell (NPMC). Manuals for the training of nurses in ophthalmic techniques and training in refraction have been developed and disseminated.

Component 3: Promoting outreach activities and public awareness. Another important

objective of the Project was to promote outreach activities and public awareness. It was envisaged that outreach activities would be complemented by Information, Education and Communication (IEC) interventions. The communication interventions for the program were initiated by the MOHFW in 1997. A Bank-funded study has been completed of the effectiveness of the public awareness generation program of the NPCB. Specific objectives of the IEC strategy were to:

Develop community-based messages: A Communications Needs Assessment (CNA) was commissioned in 1995. Based on the findings of the CNA, a communication strategy was developed by a Working Group. In February 1997, "Guidelines for Communication Workplans" were disseminated by MOHFW that clearly outlined key messages and approaches for communication and suggested budgetary allocations for IEC at the central, state and district levels. As per the recommendations of the Guidelines, funds were allocated to the DBCS and the state Directorate of Health Services (DHS) for IEC and other activities. The decentralization of funding and implementation of IEC activities to the states and DBCSs allowed IEC to be flexible to local needs, and effectively use various local media.

Design media and communication packages and strategies to address deterrents to surgery in different social contexts: In 1998, three years after the start of the Project and a year after the launch of the media campaign, a Beneficiary Assessment Survey was conducted in 14 districts within the seven focus states. The survey provided knowledge, attitude and practice data, identified expectations of the community with regard to sight restoration, beneficiaries' satisfaction with services and identified problems relating to service delivery. The findings of this study were then incorporated into the IEC strategy.

Findings of the latest beneficiary assessment (2002) indicate a significant improvement over previous figures and show that almost 94% of those needing cataract surgery were aware that cataract was curable. Over 90% of all respondents perceived the need to have a cataract operated. Sources of awareness of cataract were direct communication from doctor: 49%; and friends/neighbors/other family members (cataract afflicted): 35%. In short, demand for ECCE/IOL surgery has been steadily on the rise, largely due to interpersonal communication from patients who have benefited from enhanced quality of surgery leading to better visual outcomes.

Component 4: Building institutional capacity. This component was aimed at strengthening the institutional capacity at central, state, and district levels to manage the program; capacity to evaluate outcomes; and capacity to involve the private sector in service delivery. A substantial risk identified during Project preparation was the lack of managerial capacity, clear lines of authority and accountability within the NPCB. This risk was partially addressed as described below:

Developing institutional capacity for eye care management at the central, state and district levels: The NPCB was originally managed through two separate units at the Ministry of Health and Family Welfare (MOHFW), a Central Ophthalmic Cell responsible for technical aspects of the program and a separate administrative unit. This dichotomy resulted in poor coordination and communication, which impacted negatively on service delivery. Under the Project, an NPMC was set up at the MOHFW, responsible for designing and communicating program strategies and for

the overall implementation of the program at the national level. A National Blindness Control Board was set up with a Technical Advisory Committee to provide technical assistance to the NPMC. A remarkable feature of the NPMC has been the continuity in leadership: the Deputy Director General of Health Services in charge of the program, the Assistant Director General of Health Services, and a large proportion of their team, have been in place before and during preparation, and through the 8 years of implementation. This has resulted in an unprecedented level of involvement and commitment, as well as in-depth technical knowledge of the program which has enhanced the quality of implementation.

District Blindness Control Societies (DBCSs) had been piloted in the Danida funded districts between 1988 and 1992 and found to be effective in expanding coverage, increasing reliability and improving quality of services in the periphery. About 200 DBCSs were created during the preparatory phase. This was later increased to 278 in the course of the Project, covering all Project districts. They were registered under the Societies Registration Act, 1860, and are fully empowered to make financial and administrative decisions. The District Program Manager (DPM) was trained in program management and became accountable for day-to-day management of the Project in the district. Guidelines for the functioning of DBCS were published and disseminated. An in-depth review of all DBCSs was organized in 1999-2000 to assess their functioning, including financial management. Two strategic changes were made thereafter for the sustainability of this decentralized model: (i) State Blindness Control Societies were set up to decentralize monitoring and ensure smooth flow of funds; and (ii) since there were problems in retaining contractual DPMs, a key district level officer was designated as DPM on additional charge, with the payment of an additional allowance. This was done both to cut costs on salaries, and to reduce frequent turnover of DPMs. However, there was mixed reaction to this change, and currently the decision to have a full time or part time DPM has been left to the states.

Developing collaborative mechanisms for cooperation between the government and private/voluntary sectors: To ensure full participation of the voluntary and private sector in the program, a consortium of NGOs was to be formed to provide advice and to implement the program. The Project was successful in involving the NGO/private sector in expanding outreach and service delivery, as has been described in Section 4.2 above.

Introducing monitoring and feedback mechanisms to facilitate implementation and maintain quality control: Project implementation has been substantially enhanced by the quality of the monitoring undertaken by the NPMC. At the village level, Village Blind Registers were initiated in 1998, to identify and record blind persons in each village needing cataract surgery. A Rapid Survey tool was developed to measure outcomes efficiently in the interim between National Surveys. Beneficiary Assessments were conducted at the baseline, mid-term and endline to assess impact at the community level and beneficiary perceptions of service delivery. The NPMC has supported several centers of excellence in operations research in several states including the RP Center and Aravind Eye Hospital. This collaboration has resulted in a quantum rise in the quality of monitoring and evaluation under the Project. The M&E tools have been used in non-Project states as well, and will continue to be used to guide the program in the future.

4.3 Net Present Value/Economic rate of return:

No economic rate of analysis was carried out either at the time of project appraisal or for the ICR.

4.4 Financial rate of return:

No financial rate of return analysis was carried out either at the time of project appraisal or for the ICR.

4.5 Institutional development impact:

The institutional development impact of the Project has been substantial. In 1994, the NPCB was a small, 100% centrally-sponsored scheme with a declining budget. The substantial infusion of Bank funding has required significant institutional and management development which will continue to benefit the program in future. At the central level, the NPMC has been strengthened to play an effective facilitating and monitoring role. Several effective monitoring tools have been developed, such as the Rapid Survey, to track Project outcomes and coordinate an appropriate response. Procurement of equipment and large volumes of consumables for a growing program has been institutionalized. The capacity of the NPCB overall has been strengthened: the technical and management initiatives of the Project have been implemented in non-Project states as well; and a plan has been developed for sustaining and replicating the Project in the entire country. A second important institutional impact of the Project was the partial decentralization of the blindness program through the DBCS. The DBCS have the authority and accountability for Project implementation at the district level. The setting up of SBCSs in all the states will also promote the trend towards state ownership and authority over the program.

5. Major Factors Affecting Implementation and Outcome

5.1 Factors outside the control of government or implementing agency:

Not applicable.

5.2 Factors generally subject to government control:

From the start, the government was committed to the issue of cataract blindness control, and to increasing the access of underserved sections of society to cataract services. Several measures were adopted and implemented during the Project to facilitate the achievement of this goal: (i) the mechanism of district level societies was accepted by both central and state governments as the appropriate way in which to decentralize financial and implementing authority down to the field level; (ii) guidelines and processes were framed and adopted for the involvement of the private/NGO sectors in service delivery. This increased the outreach of the program significantly in remote areas; (iii) the private sector has been encouraged to participate in the bidding for ophthalmic equipment and supplies through national competitive bidding, as a result of which indigenous production of these items has grown, while at the same time, costs have declined dramatically and quality substantially improved. An IOL, which had been estimated to cost up to INR 800 when imported, is now being procured for INR 200 from Indian manufacturers; and (iv) the government has demonstrated its continued commitment to addressing the issue of cataract blindness by making a substantial allocation of funds for the next Plan period.

5.3 Factors generally subject to implementing agency control:

Management issues: The decision to strengthen state and district level capacity to manage and implement the program was made with the intention of increasing program outreach and coverage. While this strategy proved effective overall, management and staffing issues have been

recurrent problems right through the implementation period. Frequent staff turnover has been another problem, with DPMs being changed at the discretion of the District Collector. The implementing agency partially corrected this by posting government staff as DPMs on additional charge, rather than hiring contractual staff for the post, but the problem has persisted.

Procurement: The technical advances in the treatment of cataract blindness introduced by the Project called for the procurement of large volumes of equipment and consumables, which under World Bank procedures called for international competitive bidding and national competitive bidding procedures to be followed. Having had no experience, the NPMC contracted a procurement agency - RITES Ltd. for procurement of equipment and goods. The relationship between MOHFW and RITES was initially difficult, leading to procurement delays. Subsequently steps were taken to decentralize procurement of some items to the DBCS, which helped in ensuring supplies of consumables and allocation of more funds to the Project States for completion of civil works under force account. Delays in procurement were also caused by lack of agreement on technical specifications for some of the equipment. Some procurement delays also occurred due to a late decision to supply additional equipment such as Yag lasers.

Civil Works: There were inordinate delays in implementation of the civil works program, leading to considerable lag in the schedule. Completion and utilization of facilities has been an ongoing concern, particularly in Rajasthan, Orissa, Madhya Pradesh, and Chhattisgarh. This led to an independent review of the civil works program, and separate benchmarks for completion of civil works had been agreed with each of the Project states with a view to completing the civil works program well in advance of Project closing, so as to enable utilization of the new Project facilities in the remaining Project period. This resulted in timely action in Rajasthan and Orissa, where the civil works program was completed in an exemplary fashion and buildings were operationalized. However, for Madhya Pradesh and Chhattisgarh, it was agreed that works not completed or utilized for the purposes intended according to the agreed plan, would not be financed by the Bank.

Financial Management: Some of the major financial management issues that have impeded Project implementation have been flow of funds to DBCS, flow of funds to NGOs, and inadequate utilization of available funds by state cells: (i) annual budget allocation from the center to the states was consistently lower than that indicated in the Project plan. Over the Project period, allocations for the Project were INR 4,600 million as against the Projected Project cost of INR 5543.6 million; (ii) release of funds from GOI to the states was expected to occur on a quarterly basis. However, these were inevitably delayed while GOI waited for substantial expenditure to occur from previous releases to states. This led to delays in implementing activities, as well as delays in payments for civil works and to NGOs; and (iii) after funds were released to the State's finance departments, delays would occur while the finance department scrutinized each proposal before approval especially when states were in a difficult fiscal situation. This situation was considerably eased after state level societies were formed and funds were released directly to them.

5.4 Costs and financing:

The original Credit amount was SDR 85.300m (USD 117.80 m). An amount of SDR 7.33m was cancelled on the recommendation of the mid-term review in January 2000, revising the Credit to

SDR 77.97m. At the time of the MTR, it was recognized that expenditures in the Project were unlikely to match projections made at appraisal due to i) fall in prices of equipment and IOLs and ii) exchange rate savings. The MOHFW developed a plan of action for the remaining Project period, with increasing emphasis towards quality of care and better coverage of women and underserved populations in tribal and remote areas. Subsequently, in November 2000, the Closing Date of the Project was extended by one year, from June 30, 2001 to June 30, 2002, with a further proposed cancellation of funds of USD 20m. In March 2001, USD 20m was reallocated to a new component to support the Gujarat Earthquake Rehabilitation Program. The final disbursement took place on Nov 27, 2002, at which SDR 14.600m (USD 19.643m) amount of the Credit was cancelled, and the balance of the Credit amounting to SDR 70.700m (USD 94.236m) was disbursed.

6. Sustainability

6.1 Rationale for sustainability rating:

The sustainability rating for the Project is **highly likely**. The rationale for this rating includes:

Financial sustainability: Since cataract blindness control is an important component of the on-going national program, and will continue to need government support due to the large proportion of those requiring surgery being below the poverty line, GOI has allocated an additional INR 4,450 million during the period 2002-2007 for the program. This allocation is similar to the allocation that has been made towards the program during the previous five years under the Project.

Institutional sustainability: The management of the cataract blindness control program has been institutionalized at the central, state and district levels through an extensive network of societies. The DBCSs will be maintained, and continue to procure materials and deliver services at the district levels. SBCSs have also been set up in all states. The NPCB has also initiated efforts to integrate cataract blindness control services into the general health care system at the secondary and primary levels, thus providing a base for overall eye care.

Creating an enabling environment: The Project has been able to raise the public's awareness that cataract blindness is curable, thus generating demand for cataract surgery, particularly ECCE/IOL. At the same time, the ophthalmic industry has developed in the country, and high quality indigenously produced materials and equipment are available at low cost. The conditions have been created whereby an individual perceives him/herself to be in need of cataract surgery, and facilities are available in both the government and the private/NGO sector to fulfill this need. These private and NGO entities are now financially viable.

6.2 Transition arrangement to regular operations:

Cost Recovery: Cost recovery had initially been included as part of the Project. However, during the MTR, the government requested that the covenants concerning cost recovery be dropped in light of extensive field experience that indicated that government services were utilized by the poorest of the poor, and as such needed to be provided free of cost. Since then, several NGOs have experimented successfully with levying user charges; such initiatives are likely to become more common in the private/NGO sector. The success of such initiatives indicates that there is a

willingness to pay for cataract surgery. GOI plans to implement cost recovery more extensively in future, while putting in place an adequate mechanism to exempt from payments those below the poverty line.

Sustainability of systems for program support: The computerized Management Information System, network of Sentinel Surveillance Centers, standard tested methodology for Rapid Assessment, Beneficiary Assessment and Epidemiological studies have now been internalized into the system. These tools have been vital to focusing program inputs and maintaining the momentum of the program. They will continue to be used to monitor the implementation of activities in the Project states, and will also be extended to the other states.

Sustainability of training resources: Training institutions have been identified and developed in both the government and nongovernment sectors in different parts of the country to provide continued training support for cataract blindness control activities. The NPCB even has plans to extend training support to similar programs in the South Asia region through these institutions.

Sustainability of partnerships: The Project has developed effective partnerships with the private/NGO sector which will sustain beyond the Project period. The NPCB plans to continue funding NGOs and has developed revised guidelines for this purpose.

7. Bank and Borrower Performance

Bank

7.1 Lending:

The Bank's lending performance has been *satisfactory*. The Bank was able to draw upon valuable prior experience of Danida and other agencies that had implemented similar small Projects in India. The Project objectives and design were consistent with national goals for the control of blindness. The Bank facilitated the government's efforts to develop the technical framework and build consensus among the center, states and private/NGO sector on Project objectives and design.

An analysis of risks to the achievement of Project goals were conducted, and appropriate measures were included in Project design to minimize such risks. The 34 annexes to the Staff Appraisal Report bear testimony to the detail in which all aspects of Project implementation were prepared: (i) technical aspects, including technical guidelines, list of staff and equipment needed by type of service delivery facility, training program for ophthalmologists, training of allied personnel and service delivery models; (ii) program aspects such as Projected cataract workload in the selected states, partial list of NGOs involved in cataract blindness control, revised management structure of the NPCB, management information system, mechanism for quality control and planned operations research; and (iii) implementation aspects such as implementation timetable, procurement arrangements, flow of funds chart and supervision plan. A notable omission was civil works, and this proved to be a problem during implementation. Performance indicators were specified for measuring outcomes of the program, and baseline data was collected. Process indicators, however, were not specified.

7.2 Supervision:

The Bank's supervision is rated *satisfactory*. Supervision missions were conducted regularly

twice a year, and were pro-active in addressing pending issues. Initial problems associated with start-up such as delays in staffing, procurement and civil works were addressed by including the appropriate specialists on the team. The procurement, disbursement and financial management specialists based in the New Delhi Office provided on-going guidance and oversight on these issues. At the MTR, implementation progress was evaluated in detail, and several strong measures were taken to bring the Project focus back to the agreed objectives:

Until the MTR, task management of the Project was Head Quarters based; subsequently, task management was shifted to the New Delhi Office. This arrangement strengthened the partnership between the Bank and government teams, and allowed the Bank to be more responsive in resolving day-to-day problems faced during implementation. The Bank responded with a sense of urgency to (i) the government's request for amendments to the legal agreements and cancellation of a portion of the Credit; and (ii) the government's request for extension of the Closing Date to allow for consolidation of the gains of the Project.

Supervision was enhanced by several studies/reviews undertaken by the Bank to help focus supervision: (i) In 2000, an independent review of the civil works component was conducted. Based on this, a new implementation schedule was drawn up and agreed upon, and subsequently closely supervised by the Bank architect consultant; (ii) A model of cataract blindness prevalence was developed, comparing scenarios with and without the Project. The model can also be applied to forecast future program needs based on expected cataract blindness prevalence; and (iii) An analysis of the IEC program was undertaken. This yielded some useful recommendations for building upon the current IEC strategy and making the IEC program more effective.

7.3 Overall Bank performance:

Overall performance of the Bank is **satisfactory**. The independent review of civil works, the modeling of cataract blindness prevalence in the years to come, and Bank-initiated review of the IEC program, regular biannual supervision, as well as the Bank's flexibility and responsiveness to the Borrower's needs, have all contributed to the quality of supervision.

Borrower

7.4 Preparation:

The Borrower's Project preparation is rated **satisfactory**. Project preparation was fully participatory, with the involvement of the states, NGOs and private ophthalmologists, other agencies involved in blindness control including Danida and WHO which had the experience of implementing several pilot cataract blindness control programs in India), and past and potential beneficiaries. DBCSs were set up in all Project districts during the preparation phase, in readiness for direct transfer of Project funds from the central government. Technical and training workshops were held with technical advise from the National Eye Institute of the National Institutes of Health, WHO and Danida. A review of the NPCB was held with State Program Officers and District Collectors where agreements were reached on the administrative changes to be introduced by the Project. Japan Grant funds were utilized for beneficiary assessments, facilities surveys and a survey of ophthalmologists to determine availability of skills. Technical norms, training needs, equipment and supply needs and a partial list of NGO partners were all finalized during preparation.

7.5 Government implementation performance:

Government implementation performance is rated *satisfactory*. The government's commitment to expanding cataract blindness control activities was evident from the start: it was one of the very first Projects in the disease control sector for which they requested Bank funding. Due to the challenges of scaling up a previously small scale and technically outdated program to one that covered seven major states and emphasized quality enhancement, the program did suffer from a slow start. However, the government provided an enabling environment in terms of facilitating the participation of the private/NGO sector in Project implementation which helped expand outreach. On the other hand, funds flow from GOI to the DBCSs was an on-going problem, and contributed to slow disbursement as well as slowdown in Project activities. The audit reports were generally received after the due date and disbursements on SOE procedures were suspended twice in 1996-97 (GOI and AP) and 1997-98 (AP and TN). Disallowances were present in almost all the states basically on account of advances and non-eligibles having been claimed from IDA. Although this systemic weakness prevailed throughout with total disallowances (from GOI and participating states) aggregating over INR 190 million, the Borrower was able to get a major part of it recertified from the Auditor and reclaim it from IDA. This weakness was basically due to lack of proper training and knowledge of claim preparation and other disbursement related issues. At the end of the Credit period, a disallowed amount of INR 9.744m still remained unrecovered, which would be refunded by the client.

7.6 Implementing Agency:

The performance of the NPMC, DBCS and SBCS is rated as *satisfactory*. Some of the factors that contributed to the relatively successful implementation of the NPCB are: (i) decentralization of implementation to the district level; (ii) provision of facilities, equipment and consumables to enhance the quality of cataract surgery; (iii) provision of training through partner institutions in modern surgical techniques and the development of a cadre of trained surgeons; (iv) regular monitoring of program outcomes and active follow through; and (v) promotion of private/NGO sector involvement to increase service delivery and outreach to remote rural areas. There were persistent problems of staffing and funds flow which impeded implementation initially, and continued to be stumbling blocks through the life of the Project. However, several strategies were developed to try and overcome these problems, with some success. The decision to post a serving government officer at the district level as a DPM was partially successful in overcoming the problem of frequent turnover and disempowerment of DPMs. Similarly, the creation of SBCSs has to some extent eased the flow of funds to the district level. In addition, inadequate attention to quality of civil works led to the decision not to fund some works. Overall, the programs' emphasis on quality and the record of successful sight-restoring surgery has generated awareness and demand in the community for ECCE/IOL surgery and contributed significantly to the sustainability of the program.

7.7 Overall Borrower performance:

Overall performance of the Borrower is rated *satisfactory*.

8. Lessons Learned

The Cataract Blindness Control Project in India is the only Bank-funded blindness control Project in the world, apart from the River Blindness Control Project in Africa. At the time of preparation, therefore, the Project could not draw from lessons from previous Bank experience. However, the

Danida experience of implementing similar pilot Projects in India provided valuable guidance, and many successful Danida initiatives were incorporated into Project design, as has been pointed out earlier. The 8-year experience of implementing the Project has now yielded lessons that would be useful for other health sector Projects in India.

Institutional

1. Effective partnerships make a difference. The development of guidelines that were effectively implemented to involve the NGO and private sector in service delivery, particularly in the peripheral areas, were able to expand the reach of the program in previously underserved areas. Such efforts were not only cost-effective, but also have contributed to long-term sustainability of Project benefits.
2. A well designed monitoring mechanism is an essential management tool. The development and utilization of tools such as the Rapid Assessment Survey and the National Survey can help in streamlining the program, identifying problem areas and organizing an effective response. In addition, project indicators of success were defined not only in terms of inputs and outputs, but primarily in terms of outcomes. This makes a significant impact on how the project is managed, monitored and evaluated.
3. Projects can be leveraged to make a difference to the program. As a result of the funding and support received by the Project over the last 8 years, the entire NPCB's capacity has been built up, with improved technical norms and standards and an extended management network. The establishment of state level societies has strengthened the capacity of the states to better plan, control and monitor district level activities particularly with respect to financial management systems. Existing capacity at the state level in financial and program management and service delivery do determine the effectiveness of project implementation. However, it is possible as was the case under the Project, to build capacity of all states by actively promoting sharing of experiences and adoption of best practice of the better performing states. As a result, GOI has enhanced funding for the entire program to be on par with the level of funding it has received so far through external assistance.

Technical and Social

1. A context-specific package of services needs to be planned in remote and rural areas, since a combination of lack of eye care facilities, poor transportation, and inadequate communication are considerable challenges to people's ability to access eye care. One package will not fit all situations.
2. A thorough and participatory preparatory process is essential, where the main stakeholders become the actors and decision makers in project design. In addition, well-designed beneficiary assessment studies and knowledge, attitude, practice studies are necessary to address issues of gender disparity, low literacy, poverty, and lack of motivation which can potentially adversely affect utilization of services. Fear of surgery, myths, and resorting to uncertified practitioners could also be more effectively addressed through this mechanism. Recognition of

the different segments of patients and their cultural and social variability should become a standard feature of human development projects to ensure access and positive outcomes.

Operational

1. With the additional funding and technical assistance, including equipment and training, to the Project states, the disparity between Project and non-Project states, particularly in terms of IOL surgery, has become very obvious. After 1999, GOI tried to bridge this gap by initiating various activities from their own budgetary resources. However, non-Project states still have considerable catching up to do. In Projects which fund activities only in a few select states, as is the case with many Bank-funded Projects, it would reduce inter-state disparities to some extent if the government steps in where possible with adequate funds and training in a timely manner.

2. The focus of the Project was to reduce prevalence of cataract blindness, since cataract blindness was the leading cause of blindness and its control would substantially reduce the prevalence of blindness in India. However, the administrative, infrastructure and technical inputs of the project considerably strengthened the capacity of the NPCB to manage other emerging causes of blindness such as refractive error, childhood blindness and glaucoma. Funding a program with an apparently narrow focus, provided the Bank an entry point to restructure and strengthen the provision of systems and services for addressing all causes of blindness. By providing technical assistance and the benefit of international experience, the Bank's involvement was able to upgrade blindness services both in the Project states as well as indirectly in the country as a whole.

9. Partner Comments

(a) Borrower/implementing agency:

The Government of India is in agreement with the findings and performance ratings conveyed in the report.

1. Preamble

National Programme for Control of Blindness (NPCB) was launched in the year 1976 as a 100% centrally sponsored programme with the goal of reducing the prevalence of blindness from 1.4% to 0.3% of population. A National survey conducted during the period 1986-89 revealed that prevalence of blindness was 1.49% and Cataract accounted for 80% of blindness.

Government of India realized urgency to tackle the problem of cataract blindness and approached the World Bank for additional resources. A soft credit of US\$ 117.8 million was agreed by IDA to control cataract Blindness in India. The World Bank assisted Cataract Blindness Control Project was thus launched in 1994 to reduce the prevalence of blindness in 7 States, namely Andhra Pradesh, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamilnadu and Uttar Pradesh, where prevalence of blindness was higher than the national average of 1.49%.

The mid-term review of the project was carried out during the year 1997-98 after which some strategic changes were made in implementation of the Project. The project was to end on 30th June 2001 but was extended by one year up to 30th June 2002 to complete the unfinished tasks. The IDA credit for the project was reduced to US\$ 86.5 million.

2. Objectives

The project aimed at development of a sustainable eye care infrastructure and systems for eye care service delivery that would reduce the backlog of cataract blind persons. Specific objectives of the project were:

- (i) Upgrade the quality of cataract surgery
- (ii) Expand coverage to underprivileged areas
- (iii) Reduce the backlog of untreated cataracts to lower the prevalence cataract blindness by more than 50% by performing 11.03 million cataract operations.
- (iv) Develop human resources and institutional capacity for eye care particularly training of Ophthalmologists in ECCE/IOL cataract surgery
- (v) Promote outreach activities/public awareness
- (vi) Establishment District Blindness Control Societies in all districts
- (vii) Create an enabling environment for involving NGOs and private Sector in eye care delivery
- (viii) Develop mechanisms for cost recovery to sustain the project activities beyond the project period.

3. Borrower's Performance

3.1 Project Management

(a) *Central:* A National Project Management Cell was constituted by integrating Technical (Ophthalmology) Section in Directorate General of Health Services and Administrative (Blindness Control) Section the Ministry of Health. 17 new posts were created under the Project including posts of Joint Secretary, Under Secretary, Desk Officers, Procurement Officer, Accounts Officer and support staff. In addition, Consultants in the field of IEC, Training, Civil Works and Financial Management were appointed from time to time. While there was change in Joint Secretary and other officers from time to time, Deputy Director General and Assistant Director General in technical section continued throughout the Project Period. With these steps, capacity for planning, managing and monitoring of the project was developed at the central level.

(b) *State:* State Ophthalmic Cell, headed by Joint Director, was strengthened by creating four additional posts. In some States, some consultants/coordinators were appointed as and when required. However, there was limited development of managerial capacities in the State due to frequent changes of officers. During the last 3 years of the Project, the States were directed to constitute State Blindness Control Societies to strengthen monitoring and supervision.

(c) *District:* Implementation of Project was decentralized by forming District Blindness Control Societies in all the districts in Project States. Government of India disseminated guidelines indicating composition, constitution, functions and other subjects relating to District Blindness Control Societies. Each DBCS appointed a full time District Programme Manager (DPM) on contract basis who was designated as Member Secretary of the society and was primarily responsible to organize and manage the project activities. A two-week induction training programme was organized in small batches (20-25 trainees) by the central cell using a prototype curriculum and training manual. This input developed managerial capacities at the district level. Quarterly review meeting were organized at State and Central levels to monitor progress in implementation of the Project.

3.2 Financial Management

While the Credit Agreement was between Government of India and IDA, each Project State had entered into an Implementation Agreement with IDA. The Project was generally implemented with full commitment of the States. Each State opened a separate Head of Account where funds received under the Project were

accounted for. Audited reports were generally submitted in time i.e. within 9 months of closure of a financial year. Flow of funds from Government of India up to district level was affected by various factors leading to under utilization of available funds. This resulted into reducing the credit from US\$ 117.6 million to US\$ 106.5 million and later to US\$ 86.5 million. Main factors that affected utilization of funds and disbursement are given below:

- (a) *Lower allocation of funds:* Annual budget allocated for the Project was lower than contained in Project Plan (EFC Memorandum). Annual plans were prepared within the allocated budget. Over the project period, including one extended year, Rs.4600 million were allocated for the Project against project cost of Rs.5543.6 million.
- (b) *Delayed Release of funds:* Funds from GOI to the States are released on a quarterly basis. Finance department would agree for release of funds when substantial expenditure has been incurred by the States out of previous releases. This was not possible in case of civil works as these were time consuming activities. Funds for III and IV quarter were released late giving very little time to the States to utilize them within a financial year. Similarly, grant-in-aid to DBCSs was released in small installments of Rs.300,000 to Rs.500,000 and regulated by receipts of expenditure reports and utilization certificates.
- (c) *Delay in release of funds from State Finance to Health Departments:* Cash grants to States are released to State finance departments who would examine each proposal and then release funds to the health department for utilization. There was inadvertently delay in this mechanism. For activities like training and IEC, releases were not made or were delayed. This delay was avoided in later part of the Project in those States where SBCS was constituted as these received funds directly from Government of India and not through State Finance departments.
- (d) *Human Resources:* The States were not able to create all the proposed posts leading to delay in execution of some tasks and savings of funds. This was mainly due to the fact that expenditure on salaries would be liability of the States after the project period.
- (e) *Audit of Accounts:* It was evident in some audit reports that the project components were not clearly understood by the State Audit department leading to unnecessary disallowances, which were later cleared after clarifications. Disallowances could have been prevented if the State Project Officers had taken remedial measures before or during the audit.

3.3 Procurement Arrangements

The Procurement of goods was carried out at three levels. Items which were costly and which required International Competitive Bidding were procured centrally by Government of India. These were installed or supplied to the States as commodity assistance. Items which could not be purchased in bulk or had short expiry dates were procured locally through National Shopping. Some items particularly those required to furnish new units were procured at the State level. Generally speaking, this arrangement was satisfactory though following problems were sometimes encountered from time to time:

- (a) *Problems in Technical Evaluation:* Procurement of equipments and consumables was to be carried out after carrying out financial and technical evaluation. As bidding was on a single bid system, prices quoted by the bidders were known to those who undertook technical evaluation. There was a possibility of consideration to qualify lowest bidder on technical grounds.
- (b) *Representations and legal notices by bidders:* There were some instances when unsuccessful bidders had gone to the court of justice seeking intervention. Such instances delayed the process of

procurement and in some cases the bids were scrapped. While such instances had limited implications in implementation of the project activities, these could have been prevented if technical evaluation was carried out prior to financial evaluation.

(c) *Coordination with other activities:* Procurement of equipments, training of eye surgeons in IOL surgery and construction of new units were required to be undertaken concurrently. Training was a short-term activity (8 weeks) and should have coincided with procurement of equipments. In some instances, trained surgeons had to wait for the equipments before their acquired skills were put to use. On the other hand, in some instances, equipments were installed before eye surgeons were sent for training.

(d) *Sub-optimal utilization:* Utilization of equipments depended on availability of trained personnel, volume of patients and quality of services. Available data suggested that number of IOL implantations had increased as a proportion but the volume of surgery in Government sector, where maximum inputs were made, did not increase significantly. Unlike in Voluntary Sector, screening camps were organized in a limited manner in Government sector.

(e) *Inadequate maintenance:* After supply of major equipments and the warranty period, the States were given funds to put these equipments under Annual Maintenance Contract (AMC). This was not done in most instances. Ad hoc arrangements were made to put these equipments in functional state.

4. Bank's Performance

4.1 Disbursement

Disbursement of funds depended on timely submission of applications in required manner. These were to be supported by SOEs and Audit Reports. Factors that affected disbursement included the following:

- (a) Lower allocation of funds resulting into lower releases
- (b) Under-utilization of funds by the States/DBCSs
- (c) Late reporting of expenditure incurred by various agencies
- (d) Discrepancies between SOEs and Audit Reports
- (e) Disallowances by CAA and/or the World Bank which in some instances were not justified and later disallowances were dropped;
- (f) Delay in receipt of audit reports from the States leading to (temporary) suspension of disbursement
- (g) Expenditure perceived by the audit as irregular (which were later allowed after clarification in number of instances).

In general, Bank followed established guidelines and in some instances waived them and allowed disbursement.

4.2 Supervision

Review missions were undertaken regularly every six months during the Project. These missions were undertaken in a coordinated manner and usually included field visits. Aide Memoire contained not only the status of implementation but also mentioned benchmarks for timely action by Government of India and the States. Multi-disciplinary review missions, particularly in the initial phases of the project, were very useful in shaping the process of implementation.

5. Achievements

Objective 1. Upgrade the quality of cataract surgery

In the pre-project era, there was emphasis only on quantity of cataract surgery being performed in the country. Prevalence of blindness in any community can be reduced only when a blind person regains the

vision. This is possible only if high standards are maintained during and after delivery of services. Following steps were taken during the course of the project to upgrade the quality of cataract surgery:

- (a) Development of Norms and Standards for Cataract Surgery
- (b) Procurement of equipments and goods of high quality
- (c) Intensive hands-on training of eye surgeons in IOL Surgery
- (d) Shift in approach from surgical eye camps to fixed facilities
- (e) Focus on sight restoration through improved follow-up after surgery
- (f) Maintenance of standard Cataract Surgery Records for monitoring and follow-up
- (g) Dissemination of quality assurance guidelines

Objective 2. Expand Coverage to underprivileged areas

Following actions were taken to expand coverage of services:

- (a) **Village blind registry:** Link workers from villages were identified and oriented on methods to identify blind persons including those affected with cataract. With this innovative approach, untreated cataracts were identified.
- (b) **Organizing screening camps:** To provide services to untreated cases detected through blind registry, screening camps were organized to confirm operable cases. Such screening camps are routinely organized by NGOs who have adopted reach-in approach for providing eye care services. To facilitate referral to Government hospitals, the DBCSs organize screening camps through PHC/CHC network and/or with the help of District Mobile Units.
- (c) **Microplanning at district level:** This aimed at identifying all services providers within each district and if required from outside the district. These service providers were allotted specific blocks of the district for active screening followed by service delivery. While this approach had limited role in those districts, which had adequate eye care infrastructure, it was quiet useful exercise in those districts, which had limited eye care infrastructure.
- (d) **Involvement of community and local leaders:** Eye camps have been traditionally organized with full public cooperation. The perception of community leaders has been very positive towards eye care services. In many places Local Self Governments (Panchayats) are involved in organizing/undertaking activities particularly in blind registry, screening eye camps and follow-up services.
- (e) **Additional incentives for remote and tribal areas:** Due to difficulty in communication and transportation, an additional incentive of Rs.50 is provided to voluntary organizations for performing each cataract surgery in identified areas. In addition, NGOs provide them food and even clothes at some places, though these are arranged from their own funds. Under the scheme of providing non-recurring grants for setting-up or expanding eye care facilities for remote rural and tribal areas, grant up to Rs. 1.775 million were provided to 30 NGOs during the project period

Objective 3. Reduce the backlog of untreated cataracts to lower the prevalence cataract blindness by more than 50% by performing 11.03 million cataract operations.

- (a) **Performance of Catops by year**
The performance, as assessed by reported cataract operations, has been steadily increasing in all the Project States since the inception of the project. However, the performance is far less than

desired levels in Orissa and Rajasthan where performance has been respectively 73% and 91% of Project targets. Overall, 15.35 million operations (139%) have been performed against the Project target of 11.03 million.

(b) **Cataract Surgery Rate (Catops per 100,000 population)**

The incidence of cataract is estimated to be 2 per 1000 population per year. To clear the backlog of cataract blindness, it is therefore, necessary to enhance the performance well above 200 cataract operations per 100,000 populations. Considering that significant number of cataract operations are performed on unilateral cataracts, second eye of bilateral cases and those who are operated at Visual Acuity >6/60 (thus not blind by definition), the rate at which backlog can be expected to reduce should be over 400 operations per 100,000 population. Only 3 states (Tamilnadu, Andhra Pradesh and Maharashtra) have reached the level of over 400 catops/100,000 population. The performance in Madhya Pradesh, Rajasthan and Uttar Pradesh was between 300-400 operations, while in Orissa the Cataract Surgery Rate was 235 operations per 100,000 population.

(c) **Performance by Place of Surgery**

Nearly 17% of operations are performed in Govt. fixed facilities. Many surgeries performed in eye camps organized by NGOs are performed by Government Eye Surgeons. The proportion of surgeries performed in Private sector and NGO varied from State to State. There has been drop in camp surgeries which now account for only 8% of cataract surgeries indicating shift from camps to institutional surgery.

(d) **Catops by Type of Surgery:**

The Project target was to increase the proportion of the Cataract Surgeries with IOL implants to 30%. While less than 3% of surgeries were implanted IOLs before launch of the Project, percentage of surgeries with IOL has been steadily increasing over the years. All the States have achieved the minimum target of 30% IOL surgeries. During the year 2001-02, proportion of Intra Ocular Lens implantation ranged between 45% in Uttar Pradesh to 91% in Tamilnadu. On an average, 65% of cataract operations performed during the year 2001-02 were implanted with IOLs.

(e) **Prevalence and Causes of Blindness:**

Recent survey indicated that prevalence of blindness has reduced in all the Project States. National Prevalence Rate has declined from 1.49% to 1.1%. While cataract continues to be the major cause of blindness, proportion of blindness due to cataract has reduced from 80% to 63%.

Objective 4. Develop human resources and institutional capacity for eye care

Following activities were undertaken to meet the above objective:

a. Training of Eye Care Personnel

(i) *Training of Trainers in ECCE/IOL surgery:* Two faculty members of selected Medical Colleges in Project States were trained for duration of 16 weeks in selected training institutions in the country where over 100 trainers have been trained. The above trainers imparted training to fellow faculty of medical colleges, residents and post-graduate students.

(ii) *Training of District Eye Surgeons in ECCE/IOL surgery:* This training was organized in selected 25 institutions identified within the country. 842 eye surgeons have been trained in ECCE/IOL surgery under the Project.

(iii) *Training of other personnel*: Other categories of manpower like PHC Medical Officers, PMOAs, Health Workers etc. are being trained as per GOI guidelines. Manuals for training of Nurses in Ophthalmic Techniques and Training in Refraction were developed and disseminated.

b. Construction of Eye Wards and Operation Theatres

Construction of Eye Wards, Operation Theatres and Dark Rooms had been a leading and time-consuming activity of the Project. There were delays in execution of plans due to various reasons. As a result, while the States of AP, UP, Maharashtra, MP and Tamilnadu constructed these units expeditiously; Orissa and Rajasthan had lagged behind during the initial phase of the project. Out of 286 Eye Ward sanctioned, 273 (95%) wards have been completed. Similarly, out of 314 OTs sanctioned, 301 (96%) have been completed. These newly constructed eye wards provided 5089 additional eye beds in District Hospitals of the Project States, which will substantially increase capacity for institutional surgery. Out of 2006 Dark Rooms sanctioned, 1764 (88%) have been constructed. Hospitals Services Consultancy Co-operation (HSCC) was engaged to undertake physical audit of the works carried out in M.P.

c. Installation of Ophthalmic Equipments in existing and new facilities

Procurement at Central level

As per Project Agreement, major equipments, bulk consumables and vehicles were procured centrally through ICB procedures.

(i) **Ophthalmic Equipments**

Procurement of ophthalmic equipments was completed as per schedule. Major ophthalmic equipments include Slit Lamp, Operating Microscope, Anterior Vitrectomy unit, Keratometer, Indirect Ophthalmoscope, 'A' Scan Biometer, and Yag Lasers.

(ii) **Bulk Consumables:**

Procurement of sutures and IOLs was as per schedule during the project period. It was one of the reasons for enhancement of cataract surgery. NGOs also had access to IOLs and sutures supplied centrally as these were specifically designed, were of good quality and were procured at a cost far lower than the market price. Requirement of 10-0 sutures and IOLs rose due to increase in number of IOL facilities and trained surgeons.

(iii) **Vehicles**

Vehicles provided under the project included jeeps for supervision of various activities and vans for transportation of operable cases and teams. Each district of the Project was thus provided with 2 vehicles. These were maintained well by the DBCSs out of recurring funds made available under the Project.

(iv) **Other items**

Fax machines, photocopiers, computers with printers were procured and supplied to State Project Cells. Sentinel Surveillance Units have also been provided with portable equipments and computers.

Procurement at State level

The States procured furniture and other supplies required for newly constructed units.

Procurement by DBCSs

Funds released to DBCS included the component of consumables, minor equipments, micro-surgical

instruments and spectacles. Amendment in Credit Agreement was made to allow each DBCS to procure goods through local shopping. DBCS procured all other consumables except sutures and IOLs. Other minor items not supplied by the Government, which include sharp 'consumable' equipments, were also procured locally. In addition DBCS awards contracts to supply glasses for postoperative cases to identified agencies through local shopping.

Objective 5. Promote outreach activities/public awareness

A communication needs assessment survey was undertaken in the initial phase of the project to identify gaps in knowledge and practices of beneficiaries, decision makers in the family, community leaders and providers of eye care. Communication strategies were developed on the basis of findings. IEC activities were undertaken at Central, State and District levels. Central activities included development of prototype spots and a film for telecast and radio-spots and jingles for broadcast. These were dubbed in various languages and relayed through national and regional channels of TV and Radio. In addition, prototype material for print media were also prepared and disseminated. State level IEC was mainly limited to replication of prototype material developed at the Central level. District level activities were varied and depended on local methods of communication, socio-economic and educational status of the people.

Following documents were published and disseminated to the States:

- ✓ Norms and Standards for Eye Care;
- ✓ Cataract Extraction and Posterior Chamber IOL Implantation;
- ✓ Guidelines for District Blindness Control Societies (3 editions);
- ✓ Guidelines for Participation of NGOs (3 editions);
- ✓ Manual on Training in District Programme Management;
- ✓ Ophthalmic Nursing Manual;
- ✓ A Practical Guide on Refraction;
- ✓ Formulary on Ophthalmic Drugs;
- ✓ Modules on Quality Assurance;
- ✓ Communication Strategies for Blindness Control;
- ✓ From Darkness to Light: The Coimbatore Path;
- ✓ NPCB information booklet.

As part of baseline, mid-term and terminal evaluation, the following reports were documented:

- ✓ Communication Needs Assessment Surgery;
- ✓ Beneficiary Assessment Survey (Baseline and Terminal);
- ✓ Rapid Assessment of Cataract Blindness (Mid-term and terminal);
- ✓ Cataract Blindness & Surgical Outcomes Survey, Bharatpur, Rajasthan;
- ✓ Cataract Blindness & Surgical Outcomes Survey, Sivaganga, Tamilnadu;
- ✓ Assessment of Outcome of Cataract Surgery;
- ✓ Evaluation of Training of Ophthalmic Surgeons in ECCE/IOL Surgery;
- ✓ Survey on Blindness in 15 districts (under preparation);
- ✓ Cost-benefit analysis of Cataract Blindness Control Project (in progress);
- ✓ Evaluation of NGOs assisted under the project (in progress).

Public awareness about need for cataract surgery, advantages of IOLs and availability of free services has risen. It may not be fully attributed to IEC activities alone as good results generated by services and experiences by those who were successfully operated had an important role in generating public awareness. As a result of these, demand for cataract surgery, particularly IOL surgery rose to unexpected levels.

Objective 6. Establishment District Blindness Control Societies in all districts

Establishment of District Blindness Control Society as the nodal agency for implementing of the Project was quite successful. In-depth review of all DBCSs was organized in 1999-2000 to assess their functioning including financial management. Two strategic changes were made thereafter for sustainability of this model of decentralized management:

- *Setting up of State Blindness Control Society:* This aimed at decentralizing monitoring and smooth flow of funds to DBCSs. So far Tamilnadu, Orissa, Uttar Pradesh, Andhra Pradesh has formed SBCSs and other States are in the process of doing it. Funds to DBCSs are now routed through SBCSs in those states where these are established.
- *Designating one of the key district level officers as District Programme Manager.* Contractual DPMs were paid full remuneration whereas these officials would be paid additional allowance for their responsibility as DPMs. This was done to reduce expenditure.

Objective 7. Create an enabling environment for involving NGOs and Private Sector in eye care delivery

In the initial phases of the programme, there was over dependence on Government sector to implement NPCB. With the advent of Cataract Blindness Control Project, there has been large-scale participation of NGOs in various activities of the Project. This has been possible due to development of various schemes where financial assistance is provided under the project. NGOs are involved in following activities:

a) *Performance of Cataract Surgery:* Scheme for providing grant-in-aid for conducting free cataract operations in eye camps and base hospitals motivated many NGOs to assist in this endeavor. Assistance was revised from time to time and currently Rs.400 is provided for each conventional surgery and Rs.600 for each IOL surgery. Funds are provided to NGOs by respective DBCSs and this had considerably reduced delays in payments and strengthened monitoring. Nearly 50% of funds provided to DBCSs were utilized on grant-in-aid to NGOs. Due to this assistance, there was significant rise in performance of cataract operations by NGOs.

b) *Setting up Eye Care Facilities in underserved areas:* Non-recurring assistance was provided to NGOs to set up or strengthen an existing eye care facility in underserved areas of the Project States. 30 such grants were sanctioned during the Project period. NGOs were selected with utmost care and taking into account past track record and potential. Most of the projects sanctioned under the scheme have been completed satisfactorily. An independent evaluation was carried out by two organizations as part of terminal evaluation.

c) *Involvement in other activities:* NGOs were also involved in following areas:

- *Imparting training particularly ECCE/IOL training*
- *National level coordination:* Many leading NGOs are members of national level committees that are constituted by Government of India.
- *Evaluation Studies:* Many leading NGOs were involved in various evaluation studies conducted during the span of the Project.

Objective 8. Develop mechanisms for cost recovery to sustain the project activities beyond the project

period

Government of India has decided to continue support to National Programme for Control of Blindness in the years to come so that momentum generated due to Cataract Blindness Control Project is sustained and gains consolidated further. This is evident from the following:

- a) **Sustainability after project period:** Due to availability of IDA credit, financial resources for NPCB had risen from Rs.200 million in pre-project period (year 1993-94) to Rs.1270 million (year 2001-02). Average amount available during the project period was Rs.750 million. For the period 2002-2007, Government of India has allocated from their own resources Rs.4450 million (Average Approx. Rs.900 million). for the programme. This should be adequate not only to sustain the programme in States covered under the Project but also provide similar inputs for other underserved States of the country.
- b) **User charges for eye care:** Many States have initiated steps to initiate some user charges for eye care though poor would continue to get free services. Many NGOs, including those, which were given grants under the Project, have usually three tiers system- Paid, subsidized and free. People are ready to pay for eye care, as returns are almost immediate.
- c) **Development of ophthalmic industry within the country:** Though this was not a set objective of the project, there has been significant growth in eye care industry in the country, which can at least partly be attributed to inputs under the Project. Large consumption of ophthalmic equipments, sutures, IOLs etc. have prompted indigenous production of these goods at reasonable cost. In fact some items like IOLs are being exported to other countries. Price of these goods has been reduced to very affordable levels (e.g. IOL is available at Rs.100 a piece).

6. Constraints, Limitation and Lessons Learned

- (i) **Geo-physical barriers:** Various surveys indicate that prevalence of blindness is higher in remote rural including tribal areas. Lack of eye care facilities, poor transport services and inadequate communication have made eye care inaccessible to the population residing in these difficult terrains. Similar situation prevails in adverse climatic conditions, hilly and desert terrains and tribal belts. Such pockets continue to be deprived of services developed during the project.
- (ii) **Socio-economic factors:** Ignorance, low levels of literacy, poverty and lack of motivation have adversely affected utilization of available services. There is a tendency to postpone cataract surgery as the visual impairment is a slow and painless process. Fear of surgery, myths and wrong beliefs have been responsible for lower utilization of services. There is gender differences in service seeking behavior both quantitatively and in selecting type of surgery. Affected women have usually got the raw deal in seeking IOL implantation.
- (iii) **Long term preferences for eye camps:** Since 1950s, eye camps have been very popular in rural areas. Conducting cataract surgery in schools and community centers had become a regular feature for providing cataract surgery. Camps were the most preferred mode as it was close to beneficiaries, received good public support and were available free of cost. People waited for camps rather than visiting fixed facilities which were far off, required more time and money and lacked public support and cooperation. Though there was change in attitude of public towards fixed facility services after advent of IOL surgery, camps continue to be the first line of contact between beneficiary and provider of services.
- (iv) **Mishaps leading to untoward outcomes:** There were very few instances of mishaps when operated

cases in camp situations got complications. Such episodes led to setback in those areas where these happened. Sometimes the media blew it out of proportion. While steps were taken to prevent such mishaps, it took time to re-establish credibility of cataract surgery in affected areas.

(v) Disparity between Project and Non-project States: There was significant differences in resource allocation, commodity assistance, training and infrastructure development in States covered under the World Bank project and the rest of the country. While this was not noticeable in the beginning of the project, once the preferred method of IOL surgery was evidently available in the community, there was discontent felt both by providers and beneficiaries. It was only in 1999 that Government of India tried to bridge this technological gap by initiating various activities from their own budgetary resources at par with Project states, though with limited success due to resource constraints.

(vi) Non-comprehensiveness of the Project: All inputs under the Project were directed to control only cataract blindness. This was done with the intention that as Cataract was the leading most cause of blindness, controlling blindness due to cataract would substantially reduce prevalence of blindness. From the beneficiary point of view, it did not matter to the affected people what was the cause of their visual disability. They wanted help and if, unfortunately, they had any eye disorder other than cataract, they would be referred to some hospital or were just ignored. Eye camps became exercises just to pick up operable cataract cases. Only free cataract surgery was being promoted by giving grant-in-aid to NGOs or support to Government hospitals. This deprived opportunity for development of a comprehensive eye care programme in the country.

7. Sustainability

Cataract Blindness Control Project has led to revolution in eye care sector in the country. Availability of free IOL surgery within the reach of the common people has created an enabling environment to sustain such services after the project. People's expectations have risen high and discontinuation of support would demolish credibility that has been built over last decade. Following steps have been taken to sustain activities beyond the project period:

(i) Financial Sustainability: Eye problems affect all sections of the society. Formation of cataract is a universal phenomenon of ageing. These facts make eye care services capable of generating resources from those who can afford to pay for services. Some steps have been taken to introduce user charges in some States. However, as large proportion of affected persons are those who are below poverty line, there would be need to sustain free services to the poor and subsidized services to the middle class. Government of India has, therefore, decided to continue financial support to the programme from its own resources. Rs.4450 million have been allocated for the programme during the next five years 2002-07. This is at par with budget that was allocated during the period 1997-2002. While substantial amount of this budget would be utilize to sustain activities directed towards controlling cataract blindness, rest of the amount would be utilized for developing and supporting control of childhood blindness, corneal blindness and eye problems affecting the aged. Guidelines for Vision 2020: The Right to Sight would be generally followed.

(ii) Sustainability of Management: Capacities for management of the programme developed during the Project would be sustained at all levels. Decentralized management structure in the form of DBCS would be retained. However, steps would be taken to integrate eye care services with primary and secondary health care service delivery system.

(iii) Capacity for providing Eye Care: While major inputs were meant for controlling cataract blindness, equipments and human resources available in various facilities have uplifted eye care services in general. Providing credible IOL implantation with good visual outcomes has improved public image of eye

departments. With some more inputs, capacity for a comprehensive eye care service programme can be developed.

(iv) Capacity for Human Resource Development: The project has identified numerous Government and Non-government organizations that have capacities for undertaking various training activities required to develop eye care services in the country. Assistance provided to some institutions for improving training facilities and higher volume of cataract surgery have resulted into large training capacities. India would be in a position to support HRD even in other countries of the region.

(v) Monitoring and Evaluation Tools: Development of computerized Management Information System, network of Sentinel Surveillance Units, standard tested methodology for Rapid Assessment, Beneficiary Assessment and Epidemiological Studies have been developed during the course of the Project. These have led to a sustainable model for monitoring and evaluating eye care services. Selected institutions that had the potential to undertake reliable evaluation studies have been identified and enriched with capacities. Systems and tools for monitoring would be sustained throughout the country including those states that were not covered under the Project.

(vi) Development of Ophthalmic Industry: With procurement of large quantities of ophthalmic equipments and consumables, there has been growth of Ophthalmic industry in the country. Indigenous production of eye care equipments and consumables of good quality have lowered the prices of these items. A good quality IOL is available for Rs. 200 in open market. India is today in a position not only to meet local requirements, but is in a position to export some items.

(b) *Cofinanciers*:

(c) *Other partners (NGOs/private sector)*:

10. Additional Information

Additional information that describes the achievements of the project:

Construction of Eye Wards and Operation Theaters

Project States	Eye Wards		OTs		Dark Rooms	
	Sanctioned	Completed	Sanctioned	Completed	Sanctioned	Completed
Andhra Pradesh	19	18	19	18	264	264
Madhya Pradesh	54	46	54	46	463	383
Chattisgarh	22	18	22	18	204	178
Maharashtra	21	21	21	21	123	97
Orissa	54	54	55	55	176	176
Rajasthan	44	44	44	44	296	198
Tamil Nadu	35	35	43	43	327	315
Uttar Pradesh	32	32	47	47	150	150
Uttaranchal	5	5	9	9	3	3
Total	286	273 (95%)	314	301 (96%)	2006	1764 (88%)

Source: National Project Management Cell (Ophthalmology/Blindness Control Section)

Directorate General of Health Services; MOHFW, GOI. June 2002.

Ophthalmic Equipment supplied

States	Op. Micro.	Slit Lamp	A-Scan	Yag Laser	AVU	Keratometer	Ind. Oph.
Andhra Pradesh	40	103	97	28	33	113	50
Madhya Pradesh including Chattisgarh	108	71	116	29	71	100	67
Maharashtra	142	50	142	28	31	54	47
Orissa	69	56	68	10	39	65	47
Rajasthan	69	62	78	12	33	65	49
Tamil Nadu	126	88	140	32	74	119	79
Uttar Pradesh including Uttaranchal	183	170	180	39	63	165	54
Total	747	600	821	178	344	681	393

Source: National Project Management Cell (Ophthalmology/Blindness Control Section)
Directorate General of Health Services; MOHFW, GOI. June 2002.

Performance by Place of Surgery

States	Government Fixed Facilities	NGOs Fixed Facilities	Eye Camps	Pvt. & Others
	1999-2000	2000-2001	1999-2000	2000-2001
Andhra Pradesh	12.1	16.4	33.2	48.1
Madhya Pradesh (& Chhatisgarh)	14.1	19.0	29.6	26.9
Maharashtra	13.7	19.8	14.7	61.8
Orissa	20.3	25.4	43.7	16.6
Rajasthan	17.8	25.7	32.9	30.6
Tamil Nadu	8.3	7.2	73.7	37.9
Uttar Pradesh (& Uttaranchal)	14.9	18.8	30.5	40.3
Total	13.3	17.2	35.0	37.8

Source: National Project Management Cell (Ophthalmology/Blindness Control Section)
Directorate General of Health Services; MOHFW, GOI. June 2002.

Annex 1. Key Performance Indicators/Log Frame Matrix

Indicator	Unit/Parameter	Target	Achievements		Comments
			No.	%	
Development					
Central and State Cells/Committees/ Boards in position	Central Project Cell State Project Cells <u>Central level committees:</u> National Blindness Control Board National Project Coordination Committee National Technical Advisory Committee	1 7 1 1 1	1 7 1 1 1	100 100 100 100 100	Achievement exceeds targets due to creation of new districts Includes 9 vehicles for State/central Project cells Targets were revised during the course of the project
Setting up DBCSs	DBCS Registered/Functional	250	278	111	
Percentage of PHCs, CHCs, DMUs, DHs, and Medical Colleges equipped	Medical Colleges	39	45	115	
	District Hospitals	220	259	117	
	District Mobile Units	132	254	192	
	CHCs/Sub-district Hospitals	277	NA	NA	
	PHCs/CHCs	1936	3281	169	
Percentage of DMUs and DBCS with vehicles	DMU Vehicles	538	377	70	
	DBCS Vehicles				
Percentage of operating theaters, wards, dark rooms, etc. completed:	Operation Theatres	314	301	96	
	Eye Wards	286	273	95	
	Dark Rooms	2006	1764	88	
Manpower and Training					
Number of trained personnel by category and facility	Training of faculty as trainers	102	100	98	Information available with States
	Training of District Surgeons in IOL	661	663	100	
	Training of Nurses in Ophth. Techniques	513	100	19	
Number of new positions filled up		4496	NA	NA	DBCC was later renamed as District Programme Manager (DPM)
Number of vacancy positions		None			
Number of Ophthalmic Surgeons (OS) redeployed on surgical positions		None			
Number of DBCC (DPM) in position		278	278	100	
Number of DBCC (DPM) trained		278	278	100	
Performance					
Number of cataract operations in District/State and	Number of cataract operations (million)				Village Blind Registry initiated in 1998-99 to identify blind persons
	Andhra Pradesh	1.32	2.41	182	
	Madhya Pradesh	1.80	1.94	108	
	Maharashtra	1.38	3.03	220	
	Orissa	0.73	0.53	073	
	Rajasthan	1.38	1.25	091	
	Tamilnadu	1.55	2.61	168	
	Uttar Pradesh	2.87	3.58	125	
	<u>All Project States</u>	<u>11.03</u>	<u>15.35</u>	<u>139</u>	
	Percentage of villages covered for screening of cataract cases by talukas/districts	Villages covered for screening of cataract cases by talukas/districts	None		
Number and percentage of achievement by facility	<u>Cataract Operations (million)</u>	2.97	69	124	

(DMU/CMU/DH/MC) & Proportion of operations performed by Government, NGOs and private sector	Government Fixed facilities (MC/DH)	2.73	06	148	Estimated on the basis of National Survey 2001-02
	Eye Camps (CMU/DMU)	5.50	09	128	
	NGO Sector & Private Sector				
Operations per lakh population by State &		400	91	123 (2)	
	Andhra Pradesh	400	53	088 (4)	
	Madhya Pradesh	400	89	122 (3)	The target of Cataract Surgery
	Maharashtra	400	35	059 (7)	Rate of 400 per lakh population
Ranking of States among themselves based upon performance	Orissa	400	49	087 (5)	was by the end of the project.
	Rajasthan	400	96	149 (1)	Achievement indicated is for the
	Tamilnadu	400	23	081 (6)	year 2001-02
	Uttar Pradesh	400	96	099	Ranks of States based on
	All Project States				Cataract Surgery Rate indicated
					in parentheses
Performance rates by sex, SC-ST/Tribal areas	Proportion of operations in	50	47		
	Males	50	53		
	Females	30	53		Based on performance reports
	SC/ST				for the year 2000-01
Rankings of Districts in the State (using number and percentage of achievement by facility in DMU/CMU/ DH/MC)					Available with the States
Beneficiary Assessment					
Percentage of beneficiaries satisfied				90	Based on beneficiary
Percentage of problems encountered in awaiting services				NA	Assessment Survey 2001-02
Reasons for not availing of existing services	Economic Constraints			41.0	Based on beneficiary
	Negligence			20.1	Assessment Survey 2001-02
	Avoiding operation			12.4	
	Waiting for camps			11.0	
	Lack of motivation			7.2	
	Others			8.3	
Knowledge about services available				90	
Sources of existing knowledge about cataracts (Cataract Operated Persons)	Doctors			48.7	
	Eye Camps			4.5	
	Friends/neighbours			29.2	
	Spouse & family members			13.8	
	Others			3.8	
Number of beneficiaries whose sight has been restored (self-assessment)				90	
Financial	Year	Allocated	Utilized	%	
Percentage of budget utilized per year (Amount in Rs.millions)	1994-95	210.00	149.12		Utilization is higher than
	1995-96	540.00	275.96		allocation since 1998-99 as
	1996-97	610.00	293.94		previous unspent balances were
	1997-98	530.00	420.27		utilized during the later half of
	1998-99	530.00	538.76		the project.
	1999-00	600.00	659.63		Expenditure for the year
	2000-01	650.00	773.10		2001-02 and 2002-03 are
	2001-02	960.10	460.53		provisional as some Statement of
	2002-03	--	246.20		Expenditures are still awaited
	<i>Total</i>	4630.10	3683.32		
Percentage of DBCS fully utilizing their budget				NA	Funds are released only when
					previous ones nearly utilized
Cost of operation by facility (for each	Government Fixed Facilities		Rs. 1832		Based on Cost-Benefit Analysis

surgery)	NGO Fixed Facilities Private Fixed Facilities Eye Camps		Rs. 4977 Rs. 5332 Rs. 1128		- 2002
Correlation between cost and performance					Outcome of surgery in eye camps was least successful.
Impact Evaluation					
Prevalence of blindness (Baseline)				1.49%	National Survey 1986-89
Prevalence of blindness (Endline)				1.1%	National Survey 2001-02
Percentage of decline of prevalence				26%	
Districts free from backlog of cataract				NA	Survey done in randomly selected districts and thus districts cannot be classified
Classification/reclassification of districts on the basis of prevalence				NA	
Percentage of prevalence change in tribal districts				NA	
Efficiency and Quality					
Operations per operating surgeon per year by District/State		700	617	88	Output in 2001-02 was 3.7 million operations performed by 6000 active surgeons. Output/surgeon/year=617
Operations per bed per year by District/State & Beds occupancy ratio		50	NA		
Average operations per mobile camp by district		30			This indicator is now redundant as camp surgery is now discouraged
Percentage of population/villages fully screened		--	NA		Village Blind Registry initiated in 1998-99 to screen population aged 50+ and identify blind persons
Percentage of villages free of cataract backlog					
Age distribution of cataract operations <55		--	NA	18.2	Based on Rapid Assessment 2001
55-59		--		19.5	
60-64		--		20.4	
65-69		--		19.9	
70+		--		22.0	
Distribution of operations by					
Unilateral cases				41.8	Based on Beneficiary Survey 2002
Bilateral cases				58.2	
Percentages of turnover during follow up				75-80	Estimates
Percentages of post-operative refractions performed/glasses provided				69.4	Based on Rapid Assessment 2001
Percentages of cases encountering surgical complications				2.6	Based on National Survey 2001
Percentages of cases encountering total failure in sight restoration (medical assessment)				13.5	Based on National Survey 2001

Annex 2. Project Costs and Financing

(in XDR million)

Project Cost by Category	Allocated USD	Actual	Percentage of Allocated
Civil Works	12.59	11.04	87.69
Equipment etc.	20.14	17.33	86.05
Publicity/NGO/Op.Exp	17.53	14.90	85.00
Consultants/Training	2.88	1.66	57.64
Incremental Sal.	9.35	8.26	88.34
Emergency Earthquake Assistance for Reconstruction in Gujarat	15.48	15.48	100.00
Cancelled	7.33	7.33	
Undisbursed: to be cancelled		9.30	
Total Costs	85.30	85.30	

Project Costs by Procurement Arrangements (Appraisal Estimate)

(US\$ million equivalent)

	Procurement Method								Total
	International Competitive Bidding	Local Competitive Bidding	Local Shopping	Direct Contracting	Force Account	Consulting Services	Other	N.B.F.	
Drugs/Sutures	17.64 (15.88)	4.41 (3.97)	-	-	-	-	-	-	22.05 (19.85)
Equipment & Supplies	10.18 (9.16)	2.54 (2.29)	-	-	-	-	-	-	12.72 (11.45)
I.O.L.s	6.49 (5.84)	1.62 (1.46)	-	-	-	-	-	-	8.11 (7.30)
Vehicles	4.05 (3.64)	-	-	-	-	-	-	-	4.05 (3.64)
Spectacles	-	5.31 (4.78)	-	-	-	-	-	-	5.31 (4.78)
Civil Works	-	11.52 (9.22)	-	-	3.84 (3.07)	-	-	-	15.36 (12.29)
Vehicle Operation and Maintenance	-	-	1.00 (0.75)	1.00 (0.75)	-	-	-	-	1.99 (1.50)
Misc. Offices and Maintenance	-	-	2.09 (1.57)	-	-	-	2.09 (1.57)	-	4.18 (3.14)
Surgical Services by NGOs and Private Sector	-	-	-	4.85 (3.64)	-	-	24.53 (18.40)	0.25	29.63 (22.04)

Equipment Maintenance	-	-	-	2.65 (2.38)	-	-	-	-	2.65 (2.38)
Publicity Services	-	-	-	5.61 (4.20)	-	-	-	-	5.61 (4.20)
Contractual Services	-	-	-	2.64 (2.11)	-	-	-	-	2.64 (2.11)
Training Workshop Support	-	-	-	-	-	2.48 (1.98)	-	-	2.48 (1.98)
Salaries and Additional Staff	-	-	-	-	-	-	26.67 (20.07)	-	26.67 (20.07)
Studies & Operational Research	-	-	-	-	-	-	1.32 (1.06)	-	1.32 (1.06)
Total	38.36 (34.52)	25.41 (21.71)	3.09 (2.32)	16.74 (13.08)	3.84 (3.07)	2.48 (1.98)	54.62 (41.09)	0.25	144.78 (117.78)

Annex 3. Economic Costs and Benefits

No economic costs and benefits analysis was carried out either at the time of project appraisal or for the ICR.

Annex 4. Bank Inputs

(a) Missions:

Stage of Project Cycle	No. of Persons and Specialty (e.g. 2 Economists, 1 FMS, etc.)		Performance Rating		
	Month/Year	Count	Specialty	Implementation Progress	Development Objective
Identification/Preparation	01/28/1992	8	MSN LEADER (1), ARCH. (1), FIN. ANA. (1), PROC SPLST (1), CONSULTANTS (2) TECH. SPLSTS (2)		
	10/19/1992	6	MSN LEADER (1), TECH. SPLSTS (2), CONSULTANTS (3)		
Appraisal/Negotiation	09/27/1993	11	MSN LEADER (1), PROC. SPLST (1), TECH SPLST (2), CONSULTANTS (4), ECONOMIST (2), FIN.ANA. (1)		
	01/27/1994	4	LEGAL (1), TECH. SPLST (1), DISB. SPLTS. (2)		
Supervision	02/12/1994	7	TASK MNGR, MSN LEADER (1); ORG DEV SPEC (1); PROCUREMENT ENG.(1); IMPLEMENTATION SPEC. (1); PUBLIC HLTH SPEC (1); CONSULTANT (2)	S	S
	10/12/1994	7	TASK MNGR, MSN LEADER (1); IMPLEMENTATION SPEC. (1); RURAL SOCIO (1); PROCUREMENT ENG.(1); FIN. ANA. (1); CONSULTANT (2)		
	02/11/1995	7	TASK MNGR, MSN LEADER (1); ORG. DEV. SPECIALIST (1); NDO (3); IMPLEMENTATION SPEC. (1); TECHNICAL CONSULT. NIH (1); MISSION LEADER (1)		
	11/27/1995	10	TASK MNGR, MSN LEADER (1); BACK UP MSN LEADER (2); PUBLIC HLTH SPEC. (2); CONSULTANT (5)	S	S

11/22/1996	4	TASK MNGR, MSN LEADER (1); CW, PROCUREMENT, MIS (1); TRAINING (CONSULTANT) (1); TRAINING & MANAGEMENT (1)		
02/28/1997	6	TASK MANAGER (1); CW, PROCUREMENT, MIS (1); MANAGEMENT (1); CO-MISSION LEADER (1); OPHTHALMOLOGY, CONS. (1); PUBLIC HEALTH SPEC. (1)	S	S
08/01/1997	5	TASK MANAGER (1); TASK ASSISTANT (1); JOINT MISSION LEADER (1); PUBLIC HEALTH SPECIALI (1); SR. ECONOMIST (1)	S	S
04/01/1998	11	SR. POP. SPLST (1); PUB HLTH. SPLSTS (2); SR. PROC. SPLST (1); SR. PROC. ENGINEER (1); FIN. ANALYST (1); CONSULTANT (4);	S	S
08/31/1998	7	PRIN.PUB.HLTH SPLST (1); SR. POP. SPLST (1); PUB HLTH. SPLSTS (2); PROC SPLST (1); FIN. ANALYST (1); CONSULTANT (1)	S	S
05/03/1999		PUB. HEALTH SPECIALIST (1); CONSULTANT (1); PRIN. HLTH SPLST. (1); PROC. ENGINEER (1); FINANCIAL MGMT. SPLST. (1);	S	S
11/29/1999	5	PUBLIC HEALTH SPLST. (1); PRIN. HEALTH SPLST. (1); PROC. MGMT. SPLST. (1); FINANCIAL MGMT. SPLST. (1); CONSULTANT (1)	S	S
05/25/2000	5	PUBLIC HEALTH SPLST. (1); PROC.MGMT. SPECIALIST (1); FIN. MGMT. SPECIALIST (1); CONSULTANT (2)	S	S
01/16/2001	6	TEAM LDR. (1); TSK. LDR, PUBLIC HEALTH SPLST. (1); PROC.MGMT. SPECIALIST		

ICR	08/23/2001	6	(1); FIN. MGMT. SPECIALIST (1); CONSULTANT (2) SR. PUBLIC HEALTH SPLT (1); SR. PROCUREMENT SPLST (1); SR. FIN. MAN. SPLST. (1); CONSULTANT (3)	S	S
	01/15/2002	6	TSK. LDR, PUBLIC HEALTH SPSLT. (1); PROC.MGMT. SPECIALIST (1); FIN. MGMT. SPECIALIST (1); CONSULTANT (3)		
	06/10/2002	6	SR. PUBLIC HEALTH SPLS (1); SR. PROCUREMENT SPLST (1); SR. FINANCIAL SPLST (1); CONSULTANT (3)		S

(b) Staff:

Stage of Project Cycle	Actual/Latest Estimate	
	No. Staff weeks	US\$ ('000)
Identification/Preparation	101.2	292.9
Appraisal/Negotiation	33.3	110.5
Supervision	236.0	548.2
ICR	10.0	31.29
Total	380.5	982.89

Annex 5. Ratings for Achievement of Objectives/Outputs of Components

(H=High, SU=Substantial, M=Modest, N=Negligible, NA=Not Applicable)

	<i>Rating</i>				
	<input type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input checked="" type="radio"/> NA
<input checked="" type="checkbox"/> <i>Macro policies</i>	<input type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input checked="" type="radio"/> NA
<input checked="" type="checkbox"/> <i>Sector Policies</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Physical</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Financial</i>	<input type="radio"/> H	<input type="radio"/> SU	<input checked="" type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Institutional Development</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Environmental</i>	<input type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input checked="" type="radio"/> NA
 <i>Social</i>					
<input checked="" type="checkbox"/> <i>Poverty Reduction</i>	<input type="radio"/> H	<input type="radio"/> SU	<input checked="" type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Gender</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input type="checkbox"/> <i>Other (Please specify)</i>	<input type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Private sector development</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Public sector management</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input type="checkbox"/> <i>Other (Please specify)</i>	<input type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA

Annex 6. Ratings of Bank and Borrower Performance

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HU=Highly Unsatisfactory)

6.1 Bank performance

Rating

Lending

HS S U HU

Supervision

HS S U HU

Overall

HS S U HU

6.2 Borrower performance

Rating

Preparation

HS S U HU

Government implementation performance

HS S U HU

Implementation agency performance

HS S U HU

Overall

HS S U HU

Annex 7. List of Supporting Documents

Staff Appraisal Report; Cataract Blindness Control Project. April 21, 1994.

Memorandum and Recommendation to the President; Cataract Blindness Control Project. April 21, 1994.

Cataract Blindness Control Project; Project Review Mission Aide-Memoire. June 10, 1994.

Cataract Blindness Control Project; Project Review Mission Aide-Memoire. April 10, 1995.

Cataract Blindness Control Project; Project Review Mission Aide-Memoire. December 5, 1996.

Cataract Blindness Control Project; Project Review Mission Aide-Memoire. February 28, 1997.

Cataract Blindness Control Project; Project Review Mission Aide-Memoire; August 1, 1997.

Mid-Term Review Report; Cataract Blindness Control Project. May 13, 1998.

Mid-Term Review Report: Technical Notes on Management, Quality of Outcomes and Patient Satisfaction, Socio-Demographic Coverage and IOL Transition Training. May 13, 1998.

Mid-Term Review Final Report; Cataract Blindness Control Project. October 15, 1998.

Project Status Report: Cataract Blindness Control Project (Project ID: P010455; Loan/Credit No. 26110). November 29, 1999.

Project Status Report: Cataract Blindness Control Project (Project ID: P010455; Loan/Credit No. 26110). May 13, 1999.

Project Status Report: Cataract Blindness Control Project (Project ID: P010455; Loan/Credit No. 26110). June 13, 2000.

India: Cataract Blindness Control Project: Amendments of Legal Documents. January 17, 2000.

India: Cataract Blindness Control Project: Request for Extension of Credit Closing Date and Cancellation of USD 20m of the Credit; November 10, 2000.

Project Status Report: Cataract Blindness Control Project (Project ID: P010455; Loan/Credit No. 26110). March 13, 2001.

Project Status Report: Cataract Blindness Control Project (Project ID: P010455; Loan/Credit No. 26110). April 2, 2002.

India: Cataract Blindness Control Project: Final Supervision Mission Aide Memoire. June 2002.

National Program for Control of Blindness; Progress Report. January 2001; January 2002.

National Program for the Control of Blindness; Rapid Assessment of Cataract Blindness Survey. March 1998.

National Program for the Control of Blindness; Rapid Assessment of Cataract Blindness Survey. June 2002.

Beneficiary Assessment of World Bank Assisted Cataract Blindness Control Project; National Report and State Reports. ORG Center for Social Research; New Delhi; August 2002.

Murthy, GVS, S Gupta, LB Ellwein, SR Munoz, Dave Bachani and VK Dada. A Population-based Eye Survey of Older Adults in a Rural District of Rajasthan. *Ophthalmology*, Vol. 108, Number 4; April 2001.

Yajnik, KS. Simulation of Dynamics of Prevalence of Cataract Blindness in Seven Indian States. May 2002.

Cost-Benefit Analysis of World Bank Assisted Cataract Blindness Control Project in India. Indian Institute of Health Management Research; July 2002.

Evaluation of NGOs in a World Bank Assisted Cataract Blindness Control Project in India; State-wise Reports. Department of Health Services Studies, Tata Institute of Social Sciences, Mumbai; September 2002.

