

**ASIAN DEVELOPMENT BANK**

**JFPR: IND 36019**

**PROPOSED GRANT ASSISTANCE**  
(Financed from the Japan Fund for Poverty Reduction)

**TO**

**INDIA**

**FOR SUPPORTING**

**RAINWATER HARVESTING AND SLUM DEVELOPMENT**

**IN RAJASTHAN**

**August 2002**

## CURRENCY EQUIVALENTS

(as of 15 July 2002)

Currency Unit –		rupee/s (Re/Rs)
Re1.00	=	\$0.0205
\$1.00	=	Rs48.84

The exchange rate of the rupee is determined under a floating exchange rate system. In this report, a rate of \$1.00 = Rs48.88 is used.

## ABBREVIATIONS

ADB	–	Asian Development Bank
CBO	–	community-based organization
GTZ	–	German Agency for Technical Cooperation
INRM	–	India Resident Mission
JICA	–	Japan International Cooperation Agency
JFPR	–	Japan Fund for Poverty Reduction
NGO	–	Nongovernment organization
PAM	–	project administration memorandum
PIU	–	project implementation unit
PMU	–	project management unit
RMUD	–	Rajasthan Ministry of Urban Development
RUIDP	–	Rajasthan Urban Infrastructure Development Project

## NOTES

- (i). The fiscal year (FY) of the Government ends on 31 March. The fiscal year of this Project ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

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## I. INTRODUCTION

1. The Government of India (the Government) asked the Asian Development Bank (ADB) to prepare, through the Japan Fund for Poverty Reduction (JFPR), an innovative poverty reduction project to pilot sustainable approaches for addressing rainwater harvesting and slum development in selected areas of three cities in Rajasthan.<sup>1</sup> The Project was prepared through intensive consultation with municipal, state, and central government agencies; nongovernment organizations (NGOs); poor communities; and external assistance agencies. The JFPR Project will be closely aligned with the counterpart Rajasthan Urban Infrastructure Development Project (RUIDP). The Rajasthan state government concurred with the project concept on 23 July 2001. The Government of India concurred with the Project on 7 March 2002.

## II. BACKGROUND AND RATIONALE

### A. Slum Conditions in Rajasthan

2. The urban centers in Rajasthan, including the three towns proposed to participate in the Project, have experienced rapid population growth, much higher than the pace of new urban infrastructure. The growth rate is in excess of 4% per annum. This has resulted in massive overuse of water, drainage, and solid waste utilities throughout urban areas. The frequent droughts in Rajasthan have aggravated the situation. Rains 16-25% below normal lead to drought and scarcity of varying proportions. Rajasthan has 10.4% of India's population and 5.5% of its area, but only 1% of its water resources. In respect of rainfall, 5 districts in Rajasthan receive less than 300 millimeters (mm) rainfall per annum, while 7 districts receive rainfall between 300 and 500 mm, and the rest of the 20 districts receive more than 500 mm of average rainfall.

3. The traditional groundwater sources are being depleted at an alarming rate, with water tables falling as much as 5 meters per year in some areas. This depletion has impacted the poorer areas and slums the hardest. Although parts of Rajasthan face recurrent drought and rainfall levels are low, more than 84% of rainwater is lost through surface runoff and evaporation due to a limited use of water conservation and harvesting practices. By adopting various modern and traditional water conservation and harvesting measures, 50% of the rainwater would be saved out of the rainwater that is otherwise lost due to surface runoff. Therefore, the state requested ADB to help development of pilot programs to evaluate the most efficient and sustainable methods of rainwater harvesting for poor areas, while at the same time assisting with slum development in general. In many communities, piped water supply is only available for an hour per day. In the burgeoning slum areas this is even less, with many of the newer slums having no piped water, relying on rapidly depleting groundwater and water tankers. This is exacerbated by the ongoing rural-urban migration caused by droughts. The migrants are farmers without the necessary skills to work in an urban setting. They have no funds to purchase or rent housing, so they congregate into already overcrowded slum areas putting more and more pressure on the already overstressed facilities. This in turn leads to rapid deterioration of these facilities. The lack of safe water supply and dismal coverage of sewers and drainage in almost 100% of slums is causing terrible environmental conditions. This has led to a much higher incidence of disease, partly because of lack of safe water, lack of sewage systems, poor drainage and

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<sup>1</sup> The JFPR Project was first listed in *ADB Business Opportunities* on 15 February 2002.

the resulting flooding, impounding of wastewater, and lack of solid waste collection and disposal. Incidence of malaria is 60% higher than the national average, 8.1% of children suffer from diarrhea, and infant mortality rates due to poor environmental health are 20% higher than the national averages.

#### **B. Poverty in the Targeted Slums**

4. The slums now make up about 30% of the urban population in the three cities. The population living below the poverty line<sup>2</sup> in the slums is in the range of 50%; 20% of these fall into the poorest of the poor category.<sup>3</sup> The JFPR Project is expected to directly help improve the lives of more than 20,000 poor households (100,000 persons). In 1998 ADB approved RUIDP<sup>4</sup> for six major urban centers in the state. The RUIDP addresses poverty issues in a general way, but it does not target human poverty reduction in the slum areas. The JFPR Project will greatly assist in strengthening poverty reduction and slum rehabilitation components of the RUIDP by developing the most sustainable approaches, which can be adopted by the RUIDP and thereby, reach a much larger number of beneficiaries. The role of the participating communities is now recognized as being crucial to successful and sustainable poverty reduction and slum improvement initiatives. This means extensive involvement in planning and scoping of the interventions, and a hands-on role in implementation.

### **III. THE PROPOSED JFPR PROJECT**

#### **A. Objectives**

5. The purpose of the JFPR Project is to reduce water-related human poverty in slum and low-income urban areas in Rajasthan. The objectives are to (i) provide adequate safe drinking water to the poor by developing sustainable mechanisms for rainwater harvesting in slum areas; (ii) improving sanitary conditions through better collection and disposal of liquid and solid wastes; (iii) reducing unhygienic conditions caused by impounding of wastewater or storm runoff by improving drainage; (iv) enhancing water conservation, and personal and community hygiene through public participation and awareness; and (v) empowering local poor and slum communities through planning, implementing, and operating the new facilities. The objectives will be achieved through actual implementation of related physical works programs in targeted slums. The lessons learned in the few participating communities will then be applied to improve delivery of similar improvements on a much larger scale to other areas under the RUIDP. The project framework is in Appendix 1. A map of the project area is in Appendix 2.

#### **B. Scope**

6. The JFPR Project has six components with a number of small works under each. The components are (i) rainwater harvesting, (ii) sanitation, (iii) micro-drainage, (iv) garbage collection, (v) capacity building and awareness, and (vi) project management and impact assessment. Appendix 3 provides a detailed description of the components summarized in paras 7-10.

<sup>2</sup> Defined in India as households with monthly incomes below Rs2500 (\$53), based on year 2000 data.

<sup>3</sup> Defined in India as households with monthly incomes below Rs1500 (\$32), based on year 2000 data.

<sup>4</sup> ADB.1998. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to India for the Rajasthan Urban Infrastructure Development Project*. Manila.

7. **Physical Works.** The Project will finance a portion of the costs of constructing and implementing the various works. The remainder of the costs will be met in part by local beneficiary contributions, including labor to construct the facilities, as well as a cash contribution to ensure ownership. Once the new facilities under each of the physical components have been constructed, the local communities will operate and maintain them.

8. The rainwater harvesting component will include installation of roof structures and piping at a number of larger buildings (schools, local government offices, and commercial buildings), as well as individual houses/shelters, rainwater runoff collection tanks serving clusters of houses or local communities, simple filtration units with clean water storage tanks, and public hydrants/taps.

9. The sanitation component will include installation of individual low-cost, sanitation units/toilets and public toilets in the participating communities. The microdrainage component will include construction of localized drains to carry away wastewater from toilets, overflow from septic tanks and sullage pits, and storm runoff during the monsoon season. This will help eliminate impounding of polluted water thereby reducing associated health hazards. The garbage component will include the establishment of collection programs, procurement of small collection vehicles, and installation of community collection stations for pickup by the municipal transfer/compactor trucks. This will include separation of the garbage: organic wastes for composting in local vermiculture operations, and paper, plastics, glass, and metals for recycling.

10. **Capacity Building and Public Awareness.** This important component is complementing the physical works components of the RUIDP. The RUIDP will facilitate capacity building and awareness activities of the poor in slum areas on sanitation and preventing water-borne diseases. To this end, the JFPR Project will support (i) training of part-time sanitation and health workers from the poor slum community including resource persons for regular updates, and their services to the poor including medical kits and visits to slum areas; and (ii) public sanitation awareness campaigns in slum areas including media initiatives, puppet shows, street-corner plays, wall paintings, and poster competitions in schools situated in the slums.

11. **Project Management.** The JFPR Project will also facilitate an independent small project implementation unit (PIU) to oversee project management. The PIU will be located with the Executing Agency for the counterpart RUIDP project in Jaipur. It will consist of two full-time staff consultants and a support staff. The PIU will support various travel and workshop costs, office equipment, public relations material, special studies, and a contingency fund. It will also finance an independent poverty impact assessment of the JFPR Project to be done through a local research institute 3 months before project completion.

12. **Project Area.** The JFPR Project will target the poor and low income groups in selected slum clusters (khachi bastis, which are clusters of 50–500 households) in the three cities of Bikaner, Jaipur, and Jodhpur, and three nearby rural towns.

13. **Targeting the Poor:** The target group of the Project will be the very poor and poorer households in those selected slums. Table 1 gives an overview on the income distribution of typical slums in the three cities. In a typical slum area about 10% of households are very poor (with monthly family income of less than Rs1500), 25% are poor, 15% are low income groups, and 50% are probably nonpoor. The benefits of the JFPR Project will go mainly to the very poor and poor. However, as the Project is facilitating public goods such as garbage collection, the nonpoor will also benefit from such development. Nevertheless, all direct project benefits for components that can be privately owned (such as pay toilets, and

rainwater harvesting structures) will be exclusively for the very poor (30%) and poor (50%). Some will also be for low-income groups (20%), as all these groups live close to each other in a cluster, and toilet tanks for example will have to be shared by these beneficiary groups. Most of the beneficiaries will be women and children. In particular the sanitation component will be implemented through the active involvement of women.

**Table 1: Poverty Target Groups of the JFPR Project**

<b>Group</b>	<b>Formal and Nonformal Monthly Household Expenditure (Rs)</b>	<b>% of Households in Slum Areas</b>
<b>The Poor</b>		
Very Poor	0–1,500	10
Poor	1,500–2,500	25
Low-Income Groups	2,500–5,500	15
<b>The nonpoor</b>		
	More than 5,500	50

JFPR = Japan Fund for Poverty Reduction

Source: Asian Development Bank, National Statistical Office, interviews, and stakeholder workshop.

### **C. Cost Estimates and Financing**

14. The total costs of the Project are estimated at \$4.9 million, of which the JFPR will finance \$1.9 million equivalent on a grant basis. The state and municipal government contributions are estimated at \$0.46 million, civil society contribution through NGOs and community-based organizations (CBOs) is estimated at \$0.09 million, other assistance agencies will contribute \$0.4 million equivalent, and the participation of the poor will be worth about \$2.41 million. About 25.8% of the JFPR-financed costs will be for the rainwater harvesting component, 27.5% for the sanitation component, 26.2% for the drainage component, 7.1% for the garbage component, and 5.7% for the awareness raising component. The cost of project management, poverty impact assessments, and contingencies would account for the rest. About 49.61% of the JFPR grant will be spent in Jaipur, 22.4% in Jodhpur, 12% in Bikaner, and 7.4% in the three smaller rural cities (the balance is for overall project management). The detailed cost estimates are in Appendix 4, and the input-output matrix is in Appendix 5.

15. **Fund Flow.** The JFPR funds will be channeled from the JFPR through ADB to the India Resident Mission (INRM), which will control the funds. Imprest accounts will be established with the PIU. The ceiling for the imprest account will not exceed the estimated expenditures for the next 6 months or 20%, whichever is lower. An initial advance of 6 months' estimated expenditures will be deposited into the imprest account(s), which should be liquidated and replenished using statement of expenditure procedures for all expenses less than \$10,000. For expenditures exceeding \$10,000, the submission of full supporting documents is required. When requesting liquidation or replenishment of the imprest account, the standard withdrawal application forms as shown in the *Loan Disbursement Handbook* must be submitted. The PIU can submit the withdrawal applications through INRM for replenishment of imprest account(s).

16. The RUIDP will provide the bulk of the counterpart budget from the Government. The contribution from the beneficiaries will primarily be in the form of labor as well as in their repayment of the schemes and in sharing the costs of investments. The fund flow arrangements are in Appendix 6.

## D. Implementation Arrangements

17. **Executing Agency:** The Rajasthan Ministry of Urban Development (RMUD) will be the Executing Agency for the JFPR Project and be responsible for overall reporting to the Government and ADB. RMUD is also the executing agency for the RUIDP. The project management unit (PMU) for the RUIDP and the PIU for the JFPR Project will closely work together. The RUIDP PMU - will nominate a JFPR project liaison officer from among its staff to work with the JFPR project team about 3 days a month. Each participating city government will also nominate one JFPR focal point from its staff, who will work with RMUD and the PIU. This local coordinator will facilitate interaction among the beneficiaries, the responsible NGOs, the JFPR project management team, and the local administrations to maximize the impact of the Project.

18. **Project Implementation Unit.** An independent PIU comprising two full- time staff consultants<sup>5</sup> will be set up to manage the JFPR Project on a day-to-day basis. The PIU will be guided by the RUIDP-PMU and the city-level JFPR focal points. The PIU will be located in the same building as the RUIDP-PMU. The PIU will share the office facilities and support staff of the RUIDP-PMU, provided by the Government as a counterpart.

19. **Implementing Agencies.** The implementing agencies for the various components will be (i) NGOs and CBOs that will undertake the day-to-day leadership roles in the local communities and slums participating in the JFPR Project, and (ii) an independent local research institute for the poverty impact assessment. The local community will contribute physical labor and operate the new facilities. NGOs are essential to facilitate, educate, supervise, and support the local communities with planning, procurement of materials, construction, quality control, claims for disbursement, accounting, reporting, and general capacity building to ensure sustainability. All project activities selected by the local community and recommended by the local government require the formal approval of the PIU before implementation. The project administration memorandum (PAM) to be completed before project inception will have a list of identified NGOs and CBOs in each city to support project implementation.

20. **Steering Committee.** A steering committee will be set up and meet at least once every 6 months (and as often as necessary) to discuss the progress with JFPR project implementation. The costs of these meetings will be covered by the JFPR Project. The committee will comprise one representative from each of the departments of urban development and finance of the state, and the participating city governments; five representatives from among the poor JFPR project beneficiaries, who could elect a member of their local NGO to represent them; one representative from ADB; and one from the PIU. The implementation arrangements are summarized in Appendix 7.

21. **Procurement and Consulting Services.** Any procurement under the Project will be conducted in accordance with ADB's *Guidelines for Procurement*. In keeping with section 3.05 of the revised Project Administration Instructions (PAI), community participation in procurement will be encouraged. Procurement will, to the extent feasible, involve use of local materials and knowledge and involve local communities in the process. Project consultants, to provide technical and other assistance as may be required, will be hired by the implementing agencies in consultation with ADB, the PIU, and the steering committee. Consultants would be selected in accordance with ADB's *Guidelines on the selection of*

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<sup>5</sup> The staff consultants will be recruited by INRM, following normal ADB *Guidelines on the Use of Consultants*. One will be an experienced social community development specialist, the other a finance administration person familiar with ADB's requirements.

*Consultants.* During project implementation, the terms of reference for such consultants will be submitted to ADB for approval.

22. **Performance Monitoring and Impact Assessment.** The PIU, in consultation with the participant beneficiaries, will prepare an evaluation and monitoring framework and ensure effective project monitoring and evaluation takes place. The PAM will spell out the step-by-step procedures to be followed. It will also comprise a set of indicators for each of the key result areas.

23. **Reporting.** The PIU, through RMUD, will submit quarterly progress reports to the steering committee and ADB, setting out the physical and financial accomplishments and project impact as defined by the monitoring indicators described in para.22. The report will include a description and evaluation of the different activities conducted during the reporting period. Recommended solutions will be identified to address constraints or hindering factors. Any major changes in scope will be subject to ADB review and approval. A project completion report will be submitted within 3 months of project completion. This will include the results of the evaluation by all the stakeholders. Annual audits by an independent auditor will be undertaken at the end of the year. Audit reports will be submitted to ADB not later than 12 months after the end of each fiscal year.

## **E. Impact Assessment**

### **1. Linkages and Cooperation**

24. **Link to the RUIDP.** The JFPR Project will be linked to the RUIDP. Furthermore, since the PIU will be physically located in the RUIDP-P MU, interaction between the two projects will be constant, resulting in better impact from both. The JFPR Project will pilot innovative and sustainable approaches that can then be incorporated into the rainwater harvesting and slum rehabilitation works under the RUIDP.

25. **Aid Coordination.** The JFPR Project was developed in close consultation with United Nations Development Program (UNDP), the German Development Cooperation (GTZ) and the Canadian International Development Research Center. UNDP has been active in Rajasthan for a long time and supports a number of initiatives in community development focused on poverty alleviation, sanitation, and gender-related programs. It has traditionally been involved in rural areas, but recently become involved in similar programs in urban slums, reflecting the rapid migration from rural to urban areas, caused by the persistent droughts in the past decade. The IDRC supports poverty alleviation through environmental sanitation programs, capacity building, and micro-finance. GTZ is supporting cleaner production and wastewater disposal in communities surrounding Jaipur, focusing on small industries. GTZ participated in the three workshops held with all stakeholders in the three cities to develop the scope of this JFPR Project. GTZ staff will also support the Project during implementation. Discussions were also held with the Japan International Cooperation Agency and the Japan Bank for International Cooperation, which implement urban development projects in Delhi, Rajasthan, and cities of Uttar Pradesh. Both will support the exchange of information and their counterpart personnel during project implementation. In addition, HUMANA,<sup>6</sup> an international NGO active in a number of rural villages near Jaipur and Kota, focusing on support to women through microfinance, education, and vocational training, also supported the design phase of the JFPR Project.

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<sup>6</sup> HUMANA received a \$20,000 grant from ADB in 2000 from a regional TA. ADB. 2000. Technical Assistance for *Gender and Development*. Manila.

26. **NGO and Community Involvement.** The JFPR Project incorporates the involvement of NGOs to (i) facilitate the participation of beneficiaries (individuals, CBOs, local health clinics, schools, local informal/traditional leaders, elected leaders, and the town administration) in planning, prioritizing the physical works, and developing schemes to raise their counterpart funds; (ii) train local workers to complete the works under the Project; (iii) supervise the works to maintain a reasonable quality; (iv) train the local organizations and individuals to operate and maintain the physical facilities; (v) build the capacity these of organizations to install revenue recovery schemes to finance the operation and maintenance; (vi) conduct information campaigns and local workshops to train local people, particularly women in personal and public hygiene and health; and (vi) help empower the CBOs to seek further benefits from the RUIDP and other funding sources.

27. **Participatory Approach to Involve the Poor.** The JFPR project design is based on strong community involvement in identifying the poor, deciding on the priority works, and maintaining ownership through their participation in both a monetary sense and physically for construction. The capacity building to be carried out through the local NGOs will prepare the local communities to look after the new facilities financed by the JFPR Project. This will be done by involving the community in the decision-making process for all works and leaving responsibilities for individual beneficiary selection at the community level. Similarly, the rainwater harvesting, sanitation, solid waste, drainage, and capacity-building components will make maximum use of community ownership. NGO involvement is necessary to help mobilize the local communities, support their decision-making process, help procure materials, and maintain quality control and accounts. The local NGOs will also sign off on claims for reimbursement of JFPR funds, before they reach the PIU and INRM.

28. **Sustainability.** The sustainability of the Project will be ensured by the following: (i) The poor will contribute \$2.41 million (49%) of the project costs in cash and physical labor; this will build their strong commitment to the Project; (ii) awareness generation will be widespread to make people realize the importance of the various project components; (iii) the toilet and rainwater harvesting structures are provided as private goods, and hence will be maintained on a private basis; (iv) the Project provides services, that meet very important basic social needs; their essential nature will ensure their maintenance; (iv) because water and sanitation components are particularly relevant to women (and children), their role in maintaining them will be significant, and the Project will implement these components mainly through women-focused NGOs; (v) some of the project components (such as vermi-composting and garbage collection) contribute directly to income generation of the poor, so it will be in the interest of the poor engaged in this Project as private sector microentrepreneurs to sustain these operations beyond the project period; and (vi) the policy development component of the Project will encourage discussions with the Government to support maintenance and upgrading of the public infrastructure created (such as microdrainage). Funds for this could be made available under the counterpart RUIDP.

## 2. Poverty Reduction Impact

29. **Project Beneficiaries.** The JFPR Project will generally benefit about 100,000 people in 18–20 slum areas of three Rajasthan cities and three smaller rural towns, through improved water supply and sanitation. They make up about 2.5% of the total population of these cities, and 8.3% of the slum population. The project beneficiaries include 20% very poor (20,000 persons), 50% poor (50,000 persons) and 30% low income (30,000), although they also live as poor in serviced and unhealthy slums. About half of these will be direct beneficiaries in terms of human poverty dimensions related to better access to water supply and their living environment in slum areas of the participating cities.

30. **Poverty Reduction Impact:** The JFPR Project is addressing the issue of improving the living environment of the poor and very poor in selected slum areas in India. However, some JFPR project components are also directly helping the poor to generate income, such as the garbage collection, and health and sanitation awareness-raising components. The JFPR Project will improve social protection of the urban poor in India by helping protect them against further risk of poverty caused by environment- related illnesses. The improved water supply will reduce the length of time women need to spend fetching water, freeing up time and energy to conduct income generating activities or taking better care of their families, with the inherent reduction in hygiene- related illness, cost of health care, and loss of work time. The poverty impact analysis is in Appendix 8.

## F. Risks, Assumptions, and Assurances

31. **Risks.** The major risk for the Project is the acceptance of the poverty targeting mechanisms by the local governments, community, slum leaders, and the beneficiaries themselves. The feedback from the three major workshops held, one each in Bikaner, Jaipur, and Jodhpur, and the numerous less formal interactions with the beneficiaries and NGOs indicate that such acceptance will be there. However, the Project will need to incorporate extensive interaction with all stakeholders to generate first the trust, then the ownership and desire to participate to make a real difference. Other risks include the following:

- (i) **For rainwater harvesting.** The continuous drought may make rainwater harvesting of little priority to the poor; private building owners who often refuse to cooperate and contribute to rooftop water harvesting may start misusing the rooftop rainwater structures for other purposes; and future developments of rooftop structures may make these rainwater harvesting structures inaccessible to the intended users.
- (ii) **For garbage collection component.** Municipal workers do not clear the garbage dump yard regularly; and structures created under the Project may be disrupted and/or damaged due to private or public construction activity such as road construction or sewer line network.
- (iii) **Governance-related and other risks.** Risks related to Governance and other factors include: Conflicts that may arise between implementing agencies and the local communities; the government's geographic priorities may change; and costs of material and labor may escalate dramatically.

32. **Assumptions.** The JFPR project will be implemented on the following assumptions: (i) further adverse impact of droughts will be minimal; (ii) the slums will not be shifted by civic bodies (as the Project will support only registered tenable areas); (iii) government and private agencies will cooperate; (iv) the rainwater harvested will not be used by vested interests other than slum dwellers; (v) there would be no immigration in the supported slums; and (vi) the slum dwellers will get used to clean and better living conditions.

33. **Assurances.** The following assurances are given by the Government to facilitate proper implementation of the JFPR Project: (i) the PIU and ADB will disburse the grant funds timely as per schedule; (ii) NGOs will work as per the imperatives of the Project; (iii) ADB will be allowed to supervise, monitor, review, and control the process of project implementation; and (iv) the Government will facilitate close cooperation between the PIU and PMU, so that the PIU becomes fully operational as per the schedule.

34. **Precautions and Safeguards.** The JFPR Project will take the following safeguards and precautionary measures: (i) It will liaise in advance and obtain written consent from all relevant government departments, such as local bodies, city development authorities, and forest departments, to avoid potential problems with these departments later on. (ii) To ensure efficient monitoring, supervision, and timely completion of project activities as per the project report, establishing and starting PIU as early as possible and before NGOs are assigned contracts will be essential. (iii) To ensure smooth, cost-effective, and efficient implementation, assigning multiple activities in a slum to one NGO will be prudent to reduce expenses and ensure transparent and honest implementation. Fragmented allotment of activities to many NGOs in one slum would amount to duplicating efforts on rapport establishment in the slum, capacity building, and community awareness. Too many NGOs working in the same slum may lead to NGO rivalry, and friction. However, rainwater harvesting work could be given to specialized NGOs without essentially assigning other activities, as this requires community involvement. (iv) The NGOs selected should essentially have a prior presence in the slum area, and be conversant and experienced with the activities. (v) The PIU should conduct periodic monitoring and supervision of each NGO. The NGOs should maintain separate accounts and submit a three monthly utilization certificate.

#### **IV. THE PRESIDENT'S RECOMMENDATION**

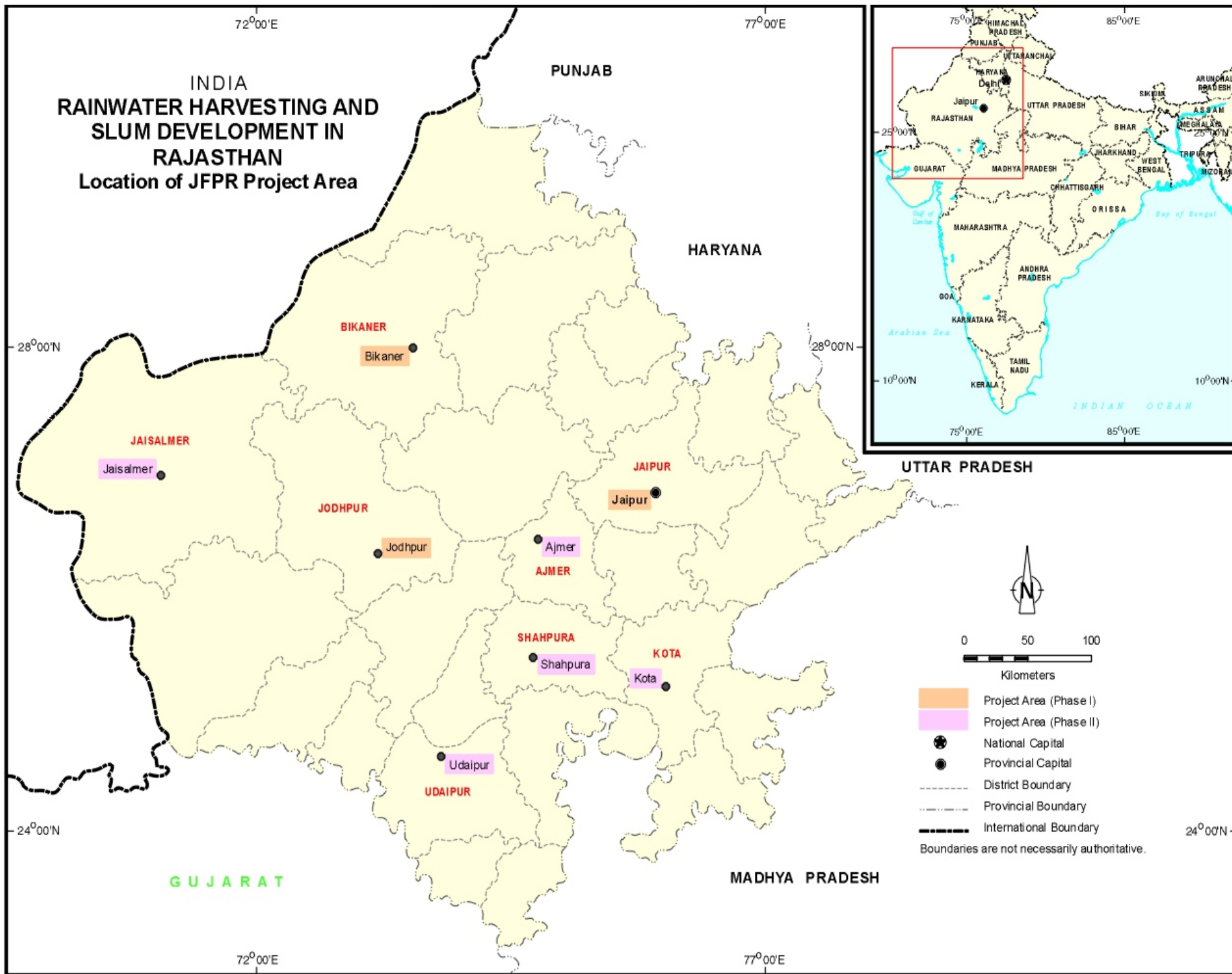
35. The President recommends that the Board approve ADB administering grant assistance to the Government of India in an amount not exceeding the equivalent of \$1,900,000 to be financed on a grant basis by the Japan Fund for Poverty Reduction, for the purposes of supporting Rainwater Harvesting and Slum Development in Rajasthan.

## PROJECT FRAMEWORK

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risk
<p><b>Goals</b> Reduce poverty and improve quality of life in slums through better access to basic urban services.</p>	<p>1 lakh poor people will benefit from the various project components.</p>	<p>Benefit monitoring evaluation study  Poverty impact assessment</p>	<p>Ineffective targeting of the poor</p>
<p><b>Purpose</b> Sustained improvement in the living environment, health, income, and quality of life for the communities of Jaipur, Jodhpur, and Bikaner base year FY2001)</p>	<p>Lower incidence of water-borne diseases, better incomes and quality of life for 20,000 poor families (1 lakh poor people) by FY2003.</p>	<p>Benefit monitoring evaluation study  Poverty impact assessment  Project completion report  Review missions</p>	<p>Non-government organizations (NGOs) fail to provide adequate technical resources  Ineffective targeting of the poor  Beneficiaries fail to provide adequate budgetary resources</p>
<p><b>Outputs</b> Improved environmental conditions in the slums of Jaipur, Jodhpur, and Bikaner.</p> <p>Better health for slum dwellers</p> <p>Improved incomes for the poor</p> <p>Empowerment of communities through participatory processes.</p>	<p>20,000 families (1,00,000 poor people) benefit from measures to improve the environment and improve quality of life in slums through drainage, sanitation, toilets, and garbage collection</p> <p>3000 families benefit directly from drinking water to be provided through rainwater harvesting. This coupled with better drainage and living environment would lower incidence of water-borne diseases like malaria and diarrhea by at least 50% in the selected slums</p> <p>2,000 families benefit directly through being engaged as garbage collectors and undertaking vermi composting. Physical and civil works under the Project generate direct employment and enhanced work time through better health and the other indirect effects.</p> <p>Awareness campaigns cover all 20,000 families  Community representatives</p>	<p>Review missions  Project progress reports  Benefit monitoring evaluation study</p> <p>Benefit monitoring evaluation study  Project progress reports  Review missions</p> <p>Poverty impact assessment  Review missions  Project progress reports</p> <p>review missions  Official notification</p>	<p>NGOs fail to generate adequate awareness  Beneficiaries fail to provide adequate budgetary resources  Ineffective targeting of the poor and poor operationalization  NGOs fail to generate adequate awareness  Ineffective targeting of the poor and poor operationalization  Community commitment to the Project does not recede</p>

<b>Design Summary</b>	<b>Performance Indicators/Targets</b>	<b>Monitoring Mechanisms</b>	<b>Assumptions and Risk</b>
	involved in the project steering committees		NGOs fail to generate adequate awareness
<b>Inputs</b> Civil works contracts and materials supply contracts  Implementation assistance	Civil works contracts and supply contracts valued at approximately \$1.7 million  Consultancy, NGO involvement, and administration services valued at approximately \$0.3 million  Capacity-building services valued at approximately \$0.15 million.	Review missions  Audits  Review missions  Project progress reports  Review missions	

1 lakh=1,00,000



02-21840 HR

## DETAILED DESCRIPTION OF PROJECT COMPONENTS

1. The Japan Fund for Poverty Reduction (JFPR) Project comprises five major components: (i) filtering harvested rainwater for immediate drinking needs and hygiene of the targeted poor, (ii) development of appropriate microdrainage systems in selected slums to pilot immediate poverty reduction, (iii) low-cost sanitation and toilets addressing the major shortage in slum areas, which is lack of space to put up such facilities, (iv) innovative and competitive systems for garbage collection, (v) public education for water conservation and sanitation in slum areas, and (vi) project management and poverty impact assessment. This appendix describes the project components and the special features of the cities in which they will be implemented.

### A. Rainwater Harvesting Structures

2. Water impoundment can be done by obstructing natural watercourses and carrying/diverting rainwater to a retaining structure constructed for the purpose. The specifications of the water-retaining structure will vary from location to location, depending upon the local conditions. The problem in water impoundment is ensuring supply to the beneficiaries. Either fetch the water from the impounded area, as people do in the rural areas, or supply is arranged. Where government and community buildings are available, rooftop rainwater harvesting can be done by creating a network of pipe system to carry the water to comprehensively covered underground structures such as the traditional methods known as *tankas*. In the pipes, sluice valves can be installed at strategic points to allow dirt and contaminants to be washed out in the first flush, and then the valves can be closed to carry the water into the underground structure. The implementing agency selected for the rainwater harvesting structures will be responsible for building and maintaining the structure. The activity will be partially complete, once the rainwater harvesting structure is created. But it will actually be used after the first rains, therefore, the implementing agency will also be responsible for maintaining it for the entire project period, i. e., 3 years. In case of any problems, the implementing agency will have to make required modifications to ensure it is optimally useful.

### B. Microdrainage System.

3. An effective microdrainage system must be constructed. Wastewater (not from toilets) from individual houses will be conveyed to secure underground percolation pits (safely away from drinking water sources) through a systematic network of common pipelines or closed/covered drains. These will not only keep the streets clear of wastewater accumulation/flooding and the attendant problems, it will also recharge the groundwater. Microdrains emanating from individual households will be connected to larger drains to convey the wastewater into the percolation pit. The cost is likely to be Rs1,500 per household on average for the entire system right up to the pit. The household beneficiary has to contribute his/her own manual labor for construction of a microdrain to link his/her household's wastewater to the larger drain. The nongovernment organization (NGO) or community-based organization (CBO) will undertake construction of microdrainage for each household and the bigger/multiple drainage with active participation of the beneficiaries and the community. It will be responsible for maintaining this microdrainage system until the end of project period of 3 years. Yearly clearing prior to rains will have to be carried out by the CBO.

### **C. Community Toilets.**

4. Slums are characterized by poor hygienic conditions of living. Often children are seen squatting in the open and defecating. Diseases such as dysentery, diarrhea, cholera, typhoid, hepatitis, and polio are communicated through excretory matter. Thus, nonexistence of private toilets in slum households is a major health hazard. This health hazard also adds to the burden of poverty through high expenditure on medical care and absence from work due to sickness. Hence, any attempt to improve living conditions of slum dwellers would be incomplete without the provision for private toilets located over a seepage pit. This pit would be stone lined without mortar so that water is absorbed by soil and fecal matter decomposes. The labor component in digging this pit will be contributed by the beneficiaries. In addition to this labor component, the beneficiaries will contribute Rs500 per household upfront before the work begins on construction of the toilets. In some cases, the poorer beneficiaries may decide to deposit the Rs500 in several monthly advance installments with the implementing NGO. However, the actual construction of toilets will only begin when the implementing NGO has received the full contribution from the beneficiaries. The toilet seat, pit cover, pit lining, and pipes will be provided from the JFPR grant. This pit is expected to last more than 5 years. After this period, it can be emptied manually. This would solve the need for paved streets and lanes. Such toilets cost about Rs12,000, of which the Project will finance about Rs10,000, and the poor will contribute \$2,000 in cash to be shared by about four households. The NGO will construct the community cluster toilets with active contributions from beneficiaries in the community. Once these toilets become operational, this component will be considered complete. Thereafter, the responsibility for its maintenance belongs to the beneficiaries.

### **D. Garbage Collection.**

5. The municipal bodies are providing garbage collection service in the middle class and upper middle class residential colonies. The garbage ferrying facilities are available right up to the entrance of slums. However, no garbage collection services operate within slums because of extremely congested lanes that the garbage-hauling trucks cannot reach. Therefore, a system has to be evolved whereby the garbage from slums can be collected from each household and placed in the nearest big garbage collection depots/transaction stations, which are cleaned by municipal services. The JFPR Project will support hiring of one sweeper and, eight garbage bins for every 100 households, to be provided by the JFPR grant for every 100 households. The JFPR grant will also provide one wheelbarrow, one spade, one metal trough, eight waste bins, and two brooms per month for 36 months to the sweeper as initial equipment costs. There will also be a small grant provision for repair and replacement of the equipment in the first 3 years. The sweeper will carry garbage from these bins and from each household daily to the municipal transfer station. In addition, the sweeper will sweep the streets and lanes falling between these 100 houses and also keep the microdrains free from obstruction for easy flow of effluent water from the kitchens and bathrooms of the households. The sweeper will receive a monthly salary of Rs1,500 for this job, of which JFPR will provide Rs10 per household in the first year, Rs7 in the second, and Rs5 in the third. The remaining contribution will come from beneficiaries each year, and after the third year each beneficiary will provide Rs15 per month to cover the full garbage collection costs. In this way this activity will become totally self-sustainable. The NGO will start the system of garbage collection with the cooperation and financial contributions

from the beneficiary households. The households will be given proper orientation and education to take full benefit of this activity. They will also be told about the significance of cleanliness of the neighborhood and public lanes and streets of the slums. This would last 3 years. Thereafter, the beneficiaries will take over the activity and sustain it on their own. In 3 years they are expected to get sufficiently used to cleanliness around them and will sustain it as a matter of habit.

## **E. Public Education**

### **1. Clean Cluster Contest.**

6. The Project will also support slum cleaning. The slum will be divided into clusters (of 100 households) and an award will be given to the best cleaner and the cleanest slum cluster. The activity will last 3 years to instill a sense of pride in being the residents of the cleanest cluster and also to initiate a sense of competition to make a neighborhood cleaner than its counterparts in other clusters. The activity will continue for 3 years. The component will be implemented with the help of the Project Implementation Unit (PIU) and the steering committee to ensure fair, nonpartisan, and objective selection of the cleanest cluster. It may involve a competition between different slums of the city looked after by different NGOs, therefore, the role of PIU becomes vital and significant.

### **2. Vermi-Composting.**

7. The garbage-composting component will be supplemented by a composting component. Under this activity, organic, biodegradable waste, will be segregated through vermi-culture technique converted into eco-friendly manure. The implementing NGO could provide forward linkages of marketing or buy-back arrangements. Each poor benefiting household can earn up to Rs125-130 per month to help the beneficiary to pay the sweeper and incur other expenses related to sanitation and hygiene. The vermi-composting scheme is proposed for only 10% of the households on an experimental basis. Preference will be given to poor households owning milk cattle as they tend to produce cattle dung, which is a sanitation problem. But this dung is a valuable raw material for vermi-composting. The implementing NGO will train the beneficiary on installation of the vermi-composting unit. Once the first cycle is complete and the beneficiary is able to earn out of the yield from first cycle, the role of NGO will be complete. Since this is an income generating activity, the beneficiaries are expected to sustain it in their own interest. The NGO may help the beneficiaries with the arrangements for selling finished product of vermi-compost.

### **3. Awareness Raising for Sanitation and Health Issues.**

8. The success of any field intervention in the social sector is dependent upon sensitization, awareness generation, orientation, and capacity building of the beneficiaries. In this Project, several measures have been proposed for sensitization and awareness building. Also an effort is being made to involve the larger urban population in promoting the cause of the Project for slum development. The various measures proposed are as follows:

9. **Slum Health Workers.** Most slum dwellers suffer from deficiency diseases and various other diseases ranging from contagious skin infections; infections such as tuberculosis, and measles, water-borne diseases like diarrhea and typhoid, and common, ailments such as allergies, coughs, and colds. Improved hygienic

conditions with increased awareness about preventive social medicine can reduce the health hazards to slum residents. Immunization and increased awareness can prevent infant and maternal mortality and morbidity. Often infants are seen collapsing due to dehydration caused by diarrhea infections in summer season, which can be easily prevented through timely administration of oral dehydration therapy (ORT). All this could be realized through an innovative system of health workers. This scheme incorporates identification of an educated female/male willing to undergo training and impart service to slum households. The doctors would train these educated workers and provide them with medical kit. The slum health worker (SHW) would take care of the awareness and minor health needs of 100 households. The SHW would visit each household once a month or more frequently if necessary. The SHW would carry all the free government supplies of iron and folic acid tablets, vitamin A solution, contraceptives, oral rehydration solution and some common painkillers and medicines to dispense. The SHW would charge the beneficiary a nominal sum for the medicines bought from the market (on no-loss, no-profit basis) and provide government supplied free medicines. For such services, the SHW would receive Rs500 per month for 3 years. After the project period, the SHW would be given Rs5 per month from every household to sustain this system for the future. Initial training and concurrent refresher training program would be provided from the JFPR grant by the implementing agency (NGO). This SHW would impart awareness on sanitation; hygiene; health; immunization; safe motherhood practices; use of sanitary napkins; prenatal, neonatal, and postnatal care, contraceptives; and family planning. Since the SHW would be from the slum community only, therefore, she/he will have a greater understanding of the problems, greater impact, and greater access to the community.

10. **Puppet Shows and Street Corner Plays.** To sensitize the slum community regarding various objectives and activities of this Project, folk media in the form of puppet shows and street-corner plays are better measures of awareness raisins. These attract young and old, illiterate and literate, and communicate the message in an easy and interesting manner. In every slum, two puppet shows and two street corner plays are proposed for every 100 households in the very first year of the Project to help mobilize and provide IEC (information, education, and communication to the community). In the second and third year of the Project, one puppet show and one street play is proposed for every 100 households in a slum. This is to reinforce the message and to communicate solutions to any problems of implementation, and facilitate a new interaction between the implementing NGO and the community. The organizing agency for puppet shows and street-corner plays will take the feedback from the implementing agencies (if there are two different agencies) and design the puppet shows and street- corner plays for each performance to meet the needs of awareness building and communication of message for the Project.

11. **Wall Paintings.** Puppet shows and street plays are effective media of communication but the duration of the effect of these activities is rather short. To compensate for this shortcoming, wall paintings are proposed at the rate of Rs500 for every 50 households in the slum area. This will ensure a long-lasting reminder to passersby about the message. Wall paintings in small, congested localities such as slums are an effective medium.

12. **Poster-Making Competition for Schools and Slogan Writing.** Children are the best target group to communicate any message effectively in any community. Involving schools children in poster-making contests, and slogan-writing competitions, would arouse tremendous enthusiasm and awareness among them. This enthusiasm and awareness invariably passes on to other family members and neighbors. Children in slums going to schools could be targeted for this competition. About 20 schools will be involved in every city. These competitions would be held twice a year and in all six competitions would be held in the project period of 3 years.

13. **Media Initiatives and Advocacy.** Media is an important institution in any democratic, civil society. It can play a proactive role for development and also sensitize the decision makers, policy planners, and public at large on key issues. Therefore, workshops are proposed in year 2 and year 3 for media initiatives and advocacy so that the ongoing process of slum development is highlighted and key issues such water conservation, sanitation, and hygiene are publicized.

#### **F. Geographic Focus.**

14. The project areas are selected “khachi bastis” (slum clusters of 200-2,000 houses) and housing areas for economically weaker sections of the society around the poverty line (EWS areas) in the three cities of Bikaner, Jaipur, and Jodhpur. These three cities are also covered under the Asian Development Bank loan. In the three cities and three smaller towns, a total estimated 8,000 households will directly benefit and another 12,000 indirectly benefit from the JFPR Project. The indirect beneficiaries include also some households in other slums that would benefit from community rainwater harvesting structures in public buildings and from awareness campaigns.

15. **Jaipur.** The locations identified in Jaipur city for slum development under the JFPR Project are mainly in slums recognized by the Jaipur Development Authority (JDA). The JFPR project will concentrate on four such areas:

- (i) **Transport Nagar (Amagarh) Slum.** This slum is located in the east of Jaipur on the righthand side of the Jaipur-Delhi-bypass. After a ban on quarrying, this site has flourished as a slum settlement. A dominant majority of the inhabitants belong to the Muslim community. Most of the households belong to daily wage earning group. There are poor and very poor persons. There are approximately 2,000 households. Despite poverty and unhygienic conditions, desire to improve living conditions is strong. Many of the residents have constructed temporary toilets with soak pits in their premises and many have attempted to construct microdrainage outside their houses. There are six child labor rehabilitation schools operated by an NGO, under an International Labor Organization project. This slum is recognized. There are many natural sites of rainwater collection from hills during the monsoon.
- (ii) **Jhalana Doongari Slum.** This slum has 2,000 dwellings. It has a mixed population of extremely poor, poor, and lower class persons. Most of the residents are involved in basic labor or small-scale self-employment such as hawking goods. This slum is also recognized by JDA. JDA has constructed flats for economically weaker section of the society in double- story structures. These houses, along with other

stone-built houses would be used for rooftop rainwater harvesting for community purposes. The area has a government school. An NGO is working in this area among the mentally retarded and spastic children, and in the area of health. Another NGO is working for community awareness and capacity building.

- (iii) **Kathputli Nagar.** This is a small slum located in downtown Jaipur. Most of the resident artisans are involved in puppet making and puppet shows. Most of the approximately 200 households are very poor or poor. This slum is located on a private land. An NGO belonging to the slum dwellers is involved in community awareness programs through puppet shows and street plays.
- (iv) **Sanganer Slums.** Sanganer has 2-3 clusters of slums with approximately 300-400 households. The residents are daily wage earners employed in fabric printing and dyeing industry, garment industry, and street shows (Madaris). They are mostly from very poor and lower class groups.

16. **Jodhpur.** Jodhpur has about 250 slum areas. A participatory workshop identified as Rajiv Gandhi Nagar (Chandan Bakhar) as the most important location for slum development under the JFPR Project in Jodhpur. Chandan Bakhar slum is the largest slum in the city with more than 2,500 households. In addition, the Project will support some other smaller slum areas in Jodhpur.

17. **Bikaner.** Most slums in Bikaner are self-improving and self-sustaining. Active NGOs and government agencies have been working on slum improvement for 3-10 years. The JFPR project could have the best impact on about 137 small slum clusters within the city (35-60 households). During project implementation, some of these clusters will be selected in a participatory process for inclusion under the JFPR Project.

## DETAILED COST ESTIMATES

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Item	Jaipur	Jodhpur	Bikaner	3 cities	Total
<b>TOTAL ADB-JFPR</b>	<b>866,738</b>	<b>344,193</b>	<b>214,483</b>	<b>125,135</b>	<b>1,900,000</b>
<b>Rainwater Harvesting</b>	<b>383,245</b>	<b>0</b>	<b>81,915</b>	<b>62,314</b>	<b>527,473</b>
Incentives for private buildings (private schools etc) in slums / roof top harvest not more than 50% of total)	31,915	0	0	15,957	47,872
Incentives of for private houses (10,000); not more than 50% of total costs	148,936	0	0	19,149	168,085
Incentives of for private house clusters (25,000); not more than 30% of costs	167,553	0	0	21,543	189,096
Water storage tanks with handpumps					53,191
Asbest sheet roofing					21,277
Subproject administration and capacity building through NGOs	34,840	0	7,447	5,665	47,952
<b>Sanitation/Toilet</b>	<b>201,064</b>	<b>143,617</b>	<b>114,894</b>	<b>25,851</b>	<b>485,426</b>
Toilet (for 4 houses)	186,170	132,979	106,383	23,936	449,468
Subproject administration and capacity building through NGOs	14,894	10,638	8,511	1,915	35,957
<b>Microdrainage</b>	<b>121,845</b>	<b>87,032</b>	<b>10,638</b>	<b>15,666</b>	<b>235,181</b>
Material costs	111,702	79,787	0	14,362	205,851
Interconnections for existing drains	0	0	10,638	0	10,638
Monthly cleanage	1,117	798	0	144	2,059
Subproject administration and capacity building through NGOs	9,026	6,447	0	1,160	16,633
<b>Garbage Collection and Vermi-Composting</b>	<b>88,629</b>	<b>63,306</b>	<b>0</b>	<b>11,395</b>	<b>163,330</b>
Salary (1 person for 100 households)	44,681	31,915	0	5,745	82,340
Equipment (for 100 households)	9,830	7,021	0	1,264	18,115
Organic composting (vermi composting)	5,213	3,723	0	670	9,606
Contest price	22,340	15,957	0	2,872	41,170
Subproject administration and capacity building through NGOs	6,565	4,689	0	844	12,099
<b>Capacity Building and Awareness</b>	<b>71,956</b>	<b>50,237</b>	<b>7,037</b>	<b>9,909</b>	<b>139,139</b>
Sanitation and health worker	14,521	10,372	3,319	1,867	30,080
Training health workers	14,521	10,372	0	1,867	26,761
Medical kit	14,521	10,372	3,319	1,867	30,080
Resource persons for training of women self-help groups on sanitation, garbage segregation, solid waste management, drinking water issues;	8,043	5,745	0	1,034	14,821
Media initiatives and advocacy	7,447	5,319	0	957	13,723
Puppet shows, street corner plays	2,979	2,128	0	383	5,489
Poster making competition for schools; slogan writing?	5,106	2,553	0	1,277	8,936
Wallpaintings	745	532	0	96	1,372
Subproject administration and capacity building through NGOs	4,073	2,844	398	561	7,876

## DETAILED COST ESTIMATES (Contd.)

Item	Jaipur	Jodhpur	Bikaner	3 cities	Total
<b>Project management</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>349,451</b>
Subproject administration					127,128
Staff					75,000
Project manager (consultant)					45,957
Project coordinator					20,745
Project assistant					8,298
Travel costs					11,489
Equipment					10,000
Computer					4,255
Copy machine					2,553
Fax, phone					1,064
Office furniture etc.					2,128
Office recurrent costs					30,638
Room rent					0
Stationary and misc.					7,660
Telephone					22,979
Policy development workshops	0	0	0	0	10,638
Independent poverty impact assessment	0	0	0	0	25,000
Contingencies	0	0	0	0	186,685
<b>Contribution from the Government</b>	<b>192,566</b>	<b>112,877</b>	<b>45,374</b>	<b>37,555</b>	<b>464,968</b>
Rainwater harvesting	33,511	0	8,936	16,755	59,202
Incentives of 50,000 for private buildings used as public goods (private schools etc)	31,915	0	8,511	15,957	56,383
Technical project support	1,596	0	426	798	2,819
Sanitation / Toilet	22,340	15,957	5,106	2,872	46,277
And	22,340	15,957	5,106	2,872	46,277
Micro-drainage	7,447	5,319	1,702	957	15,426
Technical support	7,447	5,319	1,702	957	15,426
Garbage collection and vermi composting	74,468	53,191	17,021	9,574	154,255
And	74,468	53,191	17,021	9,574	154,255
Capacity building and awareness	52,128	37,234	11,915	6,702	107,979
Public relations	14,894	10,638	3,404	1,915	30,851
Training health workers	14,894	10,638	3,404	1,915	30,851
Replenishing medical kits	22,340	15,957	5,106	2,872	46,277
Project management	2,672	1,174	694	694	81,830
Administrative support	1,609	536	268	268	2,681
Office					38,298
Policy workshops	1,064	638	426	426	2,553
Independent poverty impact assessment	0	0	0	0	38,298
<b>Contribution from NGOs</b>	<b>38,298</b>	<b>20,213</b>	<b>17,872</b>	<b>12,340</b>	<b>88,723</b>
Rainwater harvesting	6,383	0	3,191	2,128	11,702
Technical project support and coordination	6,383	0	3,191	2,128	11,702
Sanitation / Toilet	6,383	4,255	3,191	2,128	15,957
Technical project support, capacity building, and coordination	6,383	4,255	3,191	2,128	15,957
Microdrainage	2,128	1,064	851	638	4,681
Technical project support, capacity building, and coordination	2,128	1,064	851	638	4,681
Garbage collection and vermi composting	10,638	6,383	4,255	2,128	23,404
Technical project support, capacity building, and coordination	10,638	6,383	4,255	2,128	23,404
Capacity building and awareness	10,638	6,383	4,255	3,191	24,468
Project management	2,128	2,128	2,128	2,128	8,511

### DETAILED COST ESTIMATES (Contd.)

Item	Jaipur	Jodhpur	Bikaner	3 cities	Total	%
<b>Contribution from other donors (project management)</b>	<b>17,021</b>	<b>7,447</b>	<b>6,383</b>	<b>6,383</b>	<b>37,234</b>	
GTZ	10,638	4,255	4,255	4,255	23,404	
Technical project support, capacity building, and coordination	10,638	4,255	4,255	4,255	23,404	
JBIC and JICA	6,383	3,191	2,128	2,128	13,830	
Technical project support, capacity building, and coordination	6,383	3,191	2,128	2,128	13,830	
<b>Contribution by the poor</b>	<b>1,315,827</b>	<b>611,229</b>	<b>301,976</b>	<b>181,032</b>	<b>2,410,063</b>	
Rainwater harvesting	460,106	0	106,383	71,011	637,500	
50% of the costs for 30 big buildings	31,915	0	8,511	15,957	56,383	
50% of costs of private houses	148,936	0	34,043	19,149	202,128	
50% of costs for cluster-houses	279,255	0	63,830	35,904	378,989	
Sanitation / Toilet	372,340	265,957	85,106	47,872	771,277	
labor	74,468	53,191	17,021	9,574	154,255	
material	372,340	265,957	85,106	47,872	771,277	
Microdrainage	482,553	344,681	110,298	62,043	999,574	
Labor	74,468	53,191	17,021	9,574	154,255	
Material	372,340	265,957	85,106	47,872	771,277	
Maintenance costs	35,745	25,532	8,170	4,596	74,043	
Garbage collection and vermi composting	268	191	61	34	555	
Material	268	191	61	34	555	
Capacity building and awareness	0	0	0	0	0	
Project management	559	399	128	72	1,157	
Policy workshops	447	319	102	57	926	
Independent poverty impact assessment	112	80	26	14	231	
	<b>2,430,450</b>	<b>1,095,957</b>	<b>586,089</b>	<b>362,445</b>	<b>4,900,988*</b>	
%	49.6%	22.4%	12.0%	7.4%	100.0%	
<b>By Component</b>						
rainwater harvesting	902,446	0	204,783	155,516	1,262,745	25.8%
sanitation	615,217	439,130	212,826	80,435	1,347,609	27.5%
micro-drainage	627,320	447,620	126,174	81,028	1,282,141	26.2%
garbage	177,786	125,748	21,802	23,635	348,970	7.1%
awareness building	137,651	95,895	23,711	20,233	277,489	5.7%
overall project management	22,866	11,390	9,535	9,478	382,134*	7.7%
<b>By Funding Agency</b>	<b>2,430,450</b>	<b>1,095,957</b>	<b>586,089</b>	<b>362,445</b>	<b>4,900,988</b>	<b>100.0%</b>
JFPR Financed	866,738	344,193	214,483	125,135	1,900,000	38.8%
Government	192,566	112,877	45,374	37,555	464,968	9.5%
Other Donors	17,021	7,447	6,383	6,383	37,234	0.8%
Civil Society / NGOs	38,298	20,213	17,872	12,340	88,723	1.8%
The Poor	1,315,827	611,229	301,976	181,032	2,410,063	49.2%

GTZ=German Agency for Technical Cooperation, JBIC=Japan Bank for International Cooperation, JICA=Japan International Cooperation Agency, NGO= Non-government organization.

Source= Estimates arrived at during the design workshop, and fact-finding/appraisal mission.

\* These figures also include additional overall project management – costs not reflected in the citywise break up.

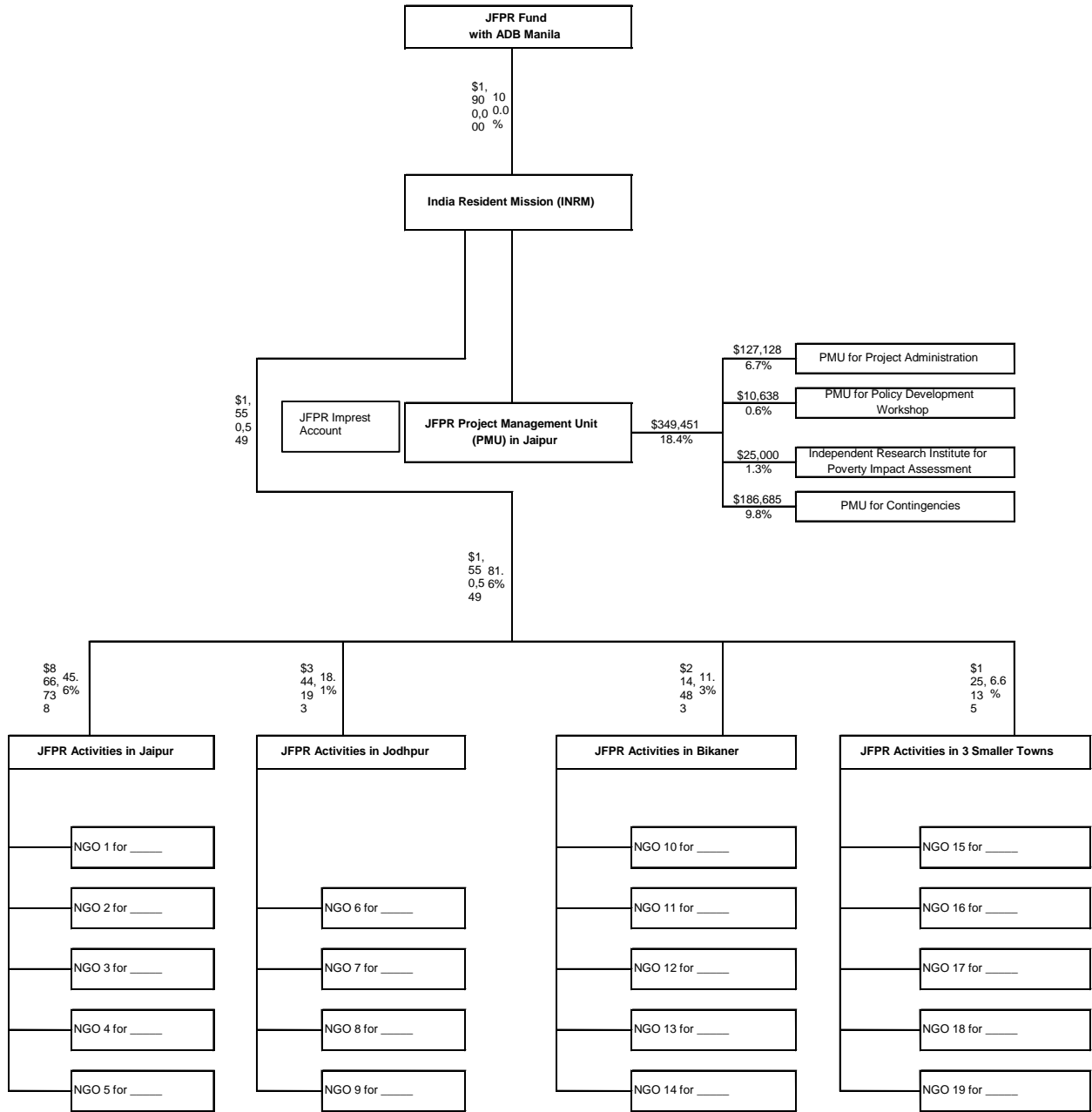
### INPUT-OUTPUT BUDGET MATRIX

(\$)

Item	Component 1:	Component 2:	component 3:	component 4:	component 5	component 6:	total	percent
	rainwater harvesting	sanitation/toilet	microdrainage	garbage	capacity building	project management		
1. Revolving credit facilities	0	0	0	0	0	0	0	0
2. Civil works	479,521.00	449,468.00	218,548.00	18,115.00	0	0	1,165,652.00	61.40
3. Equipment, machinery, materials and other capital costs	0	0	0	0	0	0	0	0
4. Supplies	0	0	0	9,606.00	30,080.00	0	39,686.00	2.10
5. Training, workshops, seminars	0	0	0	0	101,183.00	10,638.00	111,821.00	5.90
6. Consulting services	0	0	0	0	0	25,000.00	25,000.00	1.30
7. Project management	47,952.00	35,957.00	16,633.00	12,099.00	7,876.00	127,128.00	247,644.00	
8. Other project inputs	0	0	0	123,511.00	0	0	123,511.00	6.50
(through NGOs and CBOs)								
9. Contingencies	0	0	0	0	0	186,685.00	186,685.00	9.80
Subtotal JFPR financed	527,473.00	485,426.00	235,181.00	163,330.00	139,139.00	349,451.00	1,900,000.00	100.00
Government contribution	59,202.00	46,277.00	15,426.00	154,255.00	107,979.00	81,830.00	464,968.00	9.50
Other donors' contribution	0	0	0	0	0	37,234.00	37,234.00	0.80
Civil society, private sector, and others' contribution	11,702.00	15,957.00	4,681.00	23,404.00	24,468.00	8,511.00	88,723.00	1.80
Contribution of the poo	637,500.00	771,277.00	999,574.00	555.00	-	1,157.00	2,410,063.00	49.20
<b>Total project costs</b>	<b>1,235,878.00</b>	<b>1,318,936.00</b>	<b>1,254,861.00</b>	<b>341,545.00</b>	<b>271,585.00</b>	<b>478,182.00</b>	<b>4,900,988.00</b>	<b>100.00</b>

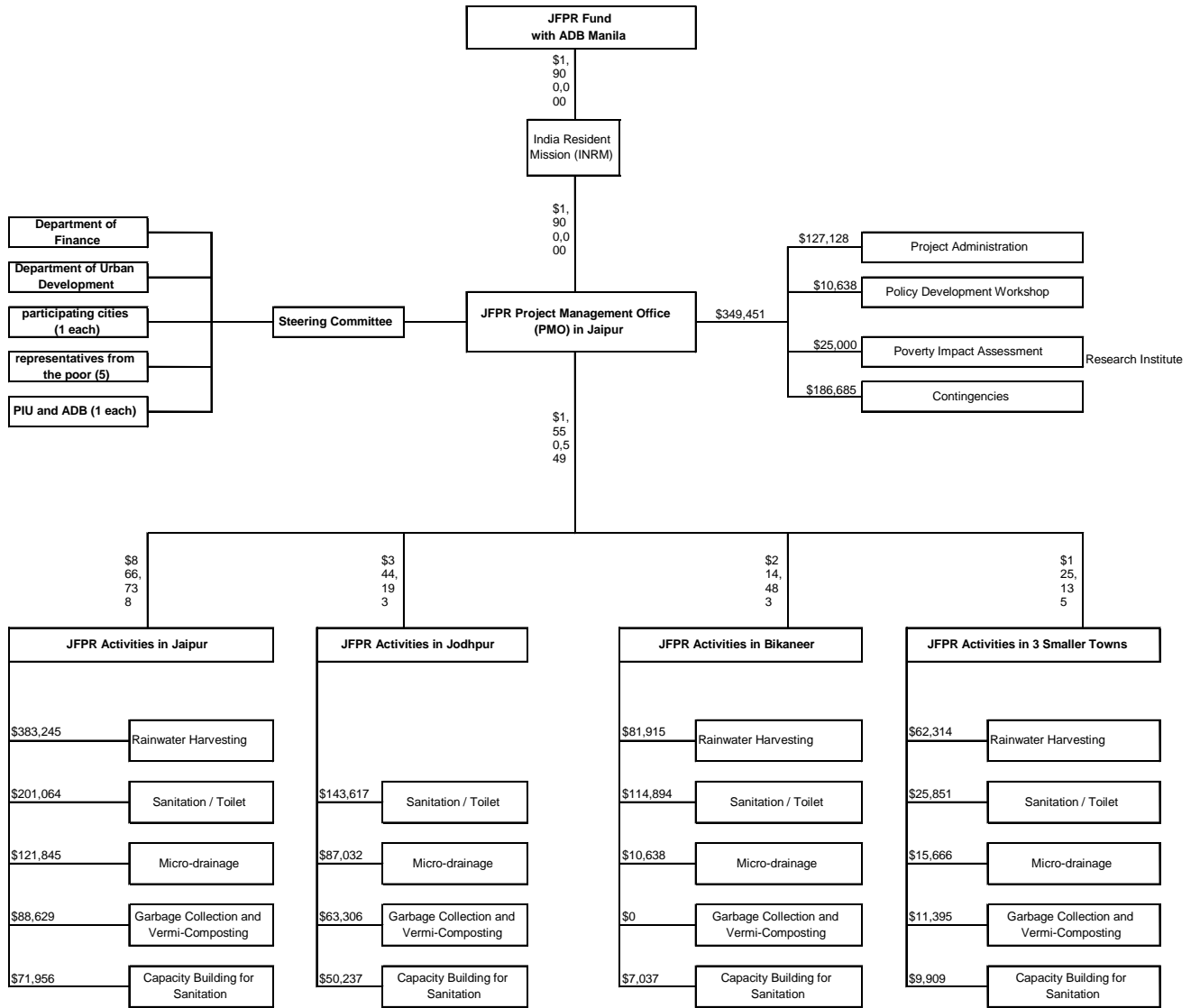
CBO=community-based organization, JFPR= japan fund for poverty reduction, NGO=non-government organization  
 Source=Estimates arrived at during the design workshop, and fact-finding/appraisal mission.

### FUND FLOW ARRANGEMENTS



JFPR= Japan fund for poverty reduction, NGO= non-government organization  
 Source= Based on detailed discussions during the design workshop, and fact-finding/appraisal mission.

### IMPLEMENTATION STRUCTURE



JFPR= Japan fund for poverty reduction

Source= Based on detailed discussions during the design workshop, and fact-finding/appraisal mission.

## POVERTY IMPACT ASSESSMENT

1. **Poverty and Human Development in India.** As per the latest official estimates<sup>1</sup> on poverty based on the 1999/2000 round of the National Sample Survey Organization, the %age of persons living below the poverty line has declined to 26.10 % as compared with the 1993/94 estimate of 36.31%. Although poverty has declined in percentage terms, about 260 million are still living below the poverty line. Concerted efforts are required to reduce the number and improve the living conditions of these poor and help the country achieve the international development goals by 2015. As per human development indices, India falls in the medium human development category. It was earlier in the low human development category. The country still has to make marked progress to reach the average levels for the medium human development countries. For instance, the life expectancy at birth in India in 1997 was 62.6 years as compared with the average of 66.6 years and 77 years for medium and high human development countries. The infant mortality and maternal mortality rates are 40% and 30% higher than the medium human development countries.<sup>2</sup>

2. **Poverty in Rajasthan.** In Rajasthan, 8.2 million people live below the poverty line, accounting for nearly 15% of the state population. The population of the state as per the 2001 census was 56.5 million. Unlike the other states, in Rajasthan a larger percentage (though not in absolute numbers) of the urban population is poor (19.85%) as against 13.74% of the rural population. The project areas of Bikaner, Jaipur, and Jodhpur have a fairly high incidence of poverty. The human poverty index<sup>3</sup> and other major economic and social indices for the project area are in Table A8.1.

**Table A8.1: Poverty Indicators in the Project Area**

Economic and Social Indices	Bikaner	Jaipur	Jodhpur
Human development index	0.5314	0.4932	0.4941
Human poverty index <sup>a</sup>	61.70	56.02	60.26
Life expectancy index	0.8398	0.6203	0.7307
Gender development index	0.4683	0.4201	0.4287
Deprivation index for electricity <sup>b</sup>	51%	52%	58%
Deprivation index of toilet facilities	65%	70%	74%
Index of infrastructure development (1992-95) with base year (1980-81) <sup>c</sup>	136.73	195.75	173.34

a= The Human Poverty Index is based on life expectancy, educational attainments, and income indicator.

b= Government of India. 1991. Delhi. Census of India – Rajasthan. 1991. Table on housing and household amenities.

c= Based on a study sponsored by Planning Department, Government of Rajasthan. The infrastructure items covered include per capita consumption of electricity, villages electrified, irrigated area, road length, motor vehicles, portable water supply, post offices, literacy, hospitals, bank deposits, advances, and offices.

Source:

3. **Urban and Rural Poverty.** The main cause for rural poverty in the region is uncertain monsoons and droughts in the state, which has large tracts of arid and semi-arid land. In fact, the canal irrigated districts of Ganganagar and Hanumangarh have in the past decade recorded significantly high levels of growth of per capita income of around 3.29%

<sup>1</sup> Official statistics on poverty in India are estimated by the Planning Commission at the national and state levels on the basis of the methodology contained in the Lakrawala Committee Report and applied to the consumption expenditure data of the National Sample Survey Organization of India.

<sup>2</sup> Hirway Indira, 1999: *Eliminating Poverty in India: Exploring Possibilities* NGO. Academics Paper on Poverty in India. City=Publisher.

<sup>3</sup> Society for International Development. 1999. *Human Development Report –Rajasthan*.

per annum in the decade 1981/92. In fact, the composition of the rural poor reveals that a large percentage (28%) are agricultural workers and (44%) are marginal and small farmers. The rest are rural artisans and other rural workers. Eighty percent of the population depend on the primary sector while 14.9% of the urban population draw their sustenance from it<sup>4</sup>. Rural poverty causes high migration rates to the major cities of Rajasthan.

4. **Unemployment.** Employment opportunities are limited and underemployment is high in rural and urban areas. The intensity of underemployment in the state was estimated at 56% in the 1990s<sup>5</sup>. The employment elasticity (growth rate of employment for per unit growth of state domestic product) for the state as a whole was 0.32 in 1991. The rates for Bikaner, Jaipur, and Jodhpur were 0.42, 0.25, and 0.33 respectively. Industrialization in Rajasthan is relatively low. Agriculture is limited due to large expanses of barren land and dependence on rain. Rajasthan has been facing continuous drought for the last 4 years. The mainstay of the economy of Rajasthan other than agriculture has been minerals, tourism, handicrafts, and animal husbandry. Mining activities have been adversely affected by various factors. The tourism industry has been on a continuous decline due to internal and external factors

5. **Living Conditions of the Urban Poor.** The living conditions of the urban poor are inhuman. Toilet facilities are not available to over half the population. Availability of portable water supply is a major problem. The incidence of diarrhea and water-borne diseases is high. A survey of the Government of Rajasthan (Family Welfare Department) in 1997 revealed that 8.1% of children were affected by diarrhea and 25% of them did not receive any treatment/ oral rehydration (ORS). The %age of incidence of diarrhea in Jaipur and Jodhpur was higher at 12% and 19%. The lack of safe water supply and dismal coverage of sewers and drainage, in almost 100% of slums, is causing terrible environmental conditions. This has led to a much higher incidence of diseases, partly because of lack of safe water, lack of sewage systems, poor drainage, and the resulting flooding and impounding of wastewater, and lack of solid waste collection and disposal. Incidence of malaria is 60% higher than the national average. In 1997 the infant mortality rates for Rajasthan were 85 as against the all India level of 71, which is 20% higher than the national average.

6. **Problems of Rajasthan's Slums.** The urban centers in Rajasthan, including the three towns proposed to participate in the Project, have experienced rapid population growth, much higher than the pace of new urban infrastructure. The growth rate is in excess of 4% per annum. This has resulted in massive overuse of existing water, drainage, and solid waste utilities throughout urban areas. In many communities, piped water supply is only available for an hour per day. In the burgeoning slum areas, this is even less, with many of the newer slums having no piped water, relying on rapidly depleting groundwater and water tankers. This is exacerbated by the ongoing rural/urban migration caused by the lingering drought now into its fourth year, as monsoon rains in 2001 have also been much less than normal. The migrants are farmers without the necessary skills to work in an urban setting, they have no funds to purchase or rent housing, so they congregate into already overcrowded slum areas putting more and more pressure on the already overstressed facilities. This in turn leads to rapid deterioration of these facilities

7. **Lack of Drinking Water.** Groundwater resources have been rapidly decline. In Jaipur for instance: the demand of groundwater is increasing 88.41 million cubic meter

<sup>4</sup> NSSO 53<sup>rd</sup> round 1997.

<sup>5</sup> Advisory committee on employment, Vyas Committee, Govt. of Rajasthan.

(MCM)/year. Due to increasing constructed area, the rechargeable area for groundwater is decreasing and leading to the decrease of groundwater recharge at 36.97 MCM/year. Overexploitation has resulted in a decline in the water table in Jaipur by 1.10 meters a year. The quality of water is also deteriorating simultaneously. The rapidly depleting groundwater resources can be artificially recharged by harvesting of rooftop/pavement rainwater, daily use water and storm water runoff. This would be highly beneficial from the environmental point of view also.

8. **Poor Hygienic Conditions.** Slums are characterized by poor hygienic living conditions. Often children are seen squatting in the open and defecating. Diseases such as dysentery, diarrhea, cholera, typhoid, hepatitis, and polio are communicated through excretory matter. Thus, nonexistence of private toilets in slum households is a major health hazard. This health hazard also adds to the burden of poverty through high expenditure incurred on medical care and absence from work due to sickness. The Project attempts at providing private toilets.

9. **Organic Waste as a Source of Income for the Poor.** The poor slum dwellers often produce organic, biodegradable waste. It often composes kitchen wastes such as vegetable peels, egg shells, bones, rotten food, tea leaves, paper, and cattle dung. This waste could be segregated and through the vermi-culture technique could be converted into eco-friendly manure. This would be a potential means for income generation as would the task of garbage collection itself.

10. **Beneficiaries.** Slums now make up up to 30% of the urban population in the three cities. The population living below the poverty line<sup>6</sup> in the slums is in the range of 50%, and 20% of these fall into the poorest of the poor category.<sup>7</sup> The poverty target groups for the JFPR Project noted in table A8.2. The JFPR Project is expected to directly help improve the lives of more than 20,000 poor households (100,000 persons). The JFPR Project will benefit about 100,000 people in 18–20 slum areas of 3 Rajasthan cities and 3 smaller rural towns, through improved water supply and sanitation. Table A8.3 shows the number of beneficiary families by component.

**Table A8.2: Poverty Target Groups of the JFPR Project**

Target Group	Formal and Nonformal Monthly Household Expenditure (Rs)	Households in Slum Areas (%)
<b>The poor</b>		
Very poor	0–1,500	10
Poor	1,500–2,200	25
Low-income groups	2,500–5,500	15
<b>The non-poor</b>	More than 5,500	50

JFPR= Japan Fund for Poverty Reduction.

Source: Asian Development Bank, National Statistical Office, interviews, and stakeholder workshop.

<sup>6</sup> Defined in India as households with monthly incomes below Rs2,500 (\$53), based on year 2000 data.

<sup>7</sup> Defined in India as households with monthly incomes below Rs1,500 (\$32), based on year 2000 data.

**Table A8.3: Number of Beneficiary Households (Poor)**

<b>Subcomponent</b>	<b>Total</b>
Rainwater harvesting	3,000
Sanitation/ Toilets	15,000
Micro drainage	
Garbage collection and vermi-compost	2,000
Awareness campaigns <sup>8</sup>	20,000
<b>Total</b>	<b>20,000</b>

11. **Increasing Poor People's Income:** The JFPR Project will promote income generation by (i) providing employment to garbage collectors, health workers, and those involved in construction activities; and (ii) income generation through solid waste management and vermi-compost pits. It will indirectly contribute to income generation by (i) freeing up time for income generation activities by reducing time for fetching water, (ii) improving availability of water for drinking and self-employment for commercial use (for gemstone cutting and polishing), and (iii) reducing water-and hygiene-related illness, and reducing expenditure on health care and water and loss of work time (better disability adjusted life years).

12. **Other Poverty Reduction Impact:** The Project will (i) contribute to improved urban environment and better health; (ii) enhance the access of poor communities in the project area to basic infrastructure and services; (iii) enhance the income of the poor; (iv) improve awareness, which will benefit the family and ensure sustainability; and (v) ensure environmental sustainability in the long run through recharge of groundwater. The Project will mainly address human poverty dimensions related to better access to water supply and the living environment in slum areas of the participating cities.

<sup>8</sup> Awareness campaigns will cover all the targeted JFPR households. It would also benefit other poor groups in the city.