ASIAN DEVELOPMENT BANK

TAR:INO 35182

TECHNICAL ASSISTANCE
(Cofinanced by the Government of the Netherlands)

TO THE

REPUBLIC OF INDONESIA

FOR PREPARING THE

FLOOD MANAGEMENT IN SELECTED RIVER BASINS PROJECT

August 2003

CURRENCY EQUIVALENTS
(as of 08 July 2003)

Currency Unit	–	Rupiah (Rp)
Rp1.00	=	$0.000121
$1.00	=	Rp8,273

ABBREVIATIONS

ADB	–	Asian Development Bank
Balai PSDA	–	Pengembangan Sumber Daya Air (Provincial Basin Management Unit)
BAPPENAS	–	Badan Perencanaan Pembangunan Nasional (National Development Planning Agency)
DGWR	–	Directorate General of Water Resources
EA	–	executing agency
MOF	–	Ministry of Finance
MOFr	–	Ministry of Forestry
MOHA	–	Ministry of Home Affairs
MSRI	–	Ministry of Settlements and Regional Infrastructure
TA	–	technical assistance

NOTES

(i) The fiscal year (FY) of the Government ends on 31 December.

(ii) In this report, "$" refers to US dollars.

This report was prepared by T. Miyazato, Southeast Asia Department.

I. INTRODUCTION

1. During the 2002 country programming mission, the Government of Indonesia requested technical assistance (TA) to prepare a project for flood management in selected river basins in Java to reduce floods through integrated river basin management and ensure active participation of local communities in flood management. The Mission held detailed discussions with the National Development Planning Agency (BAPPENAS), and the ministries of settlements and regional infrastructure (MSRI), finance (MOF), forestry (MOFr), and home affairs (MOHA), on the rationale, objectives, scope, cost estimates, implementation arrangements, and financing plan for the TA. The Mission also met with the officials of the World Bank, Japan Bank for International Cooperation, Japan International Cooperation Agency, and the Netherlands Embassy in Jakarta. The TA has been designed to be in line with the Government's priorities and anticipated initiatives, as well as with the current emphasis of the Asian Development Bank (ADB) in Indonesia. The TA is included in ADB's 2003 country assistance program for Indonesia.[1]

II. ISSUES

2. Flood damage in Java has become more serious year by year. In January 2002, approximately 100 km^2 (15%) out of 650 km^2 around Jakarta were flooded. The flood claimed lives of 80 people and the destruction continued for more than 1 month. The physical damage was estimated at Rp5.4 trillion ($635 million) together with indirect economic losses of Rp4.5 trillion ($529 million).

3. Floods impact more severely on the poor as they tend to live in river basins and the flood-prone areas. Livelihood opportunities of the poor are also vulnerable to flood surges. Frequent flooding causes poverty and human suffering and is a major constraint on socioeconomic development.

4. The Government has implemented a number of flood control projects mostly with its own resources. ADB has financed three flood control projects, of which one has been completed and two are in advanced stage of implementation. Lessons learned from the past and ongoing projects indicate that removal of the threat of frequent flooding will require (i) a holistic approach to flood management within a river basin through a combination of structural and non-structural measures; (ii) participation of local governments and people in planning and implementing preventive measures; (iii) improvement of flood warning systems; and (iv) adequate level of funding for completed facilities.

5. Past efforts emphasized controlling floods by structural measures such as confining floodwater between artificial embankments, which needed to be continually higher and stronger to protect growing cities on the floodplain. Little attention has been paid to manage watersheds which have degraded over the years because of the conversion of forest and uplands to agricultural and other uses. Watershed management consists of integrated environmental activities related to the use and modification of land and water of an entire watershed system, from the uplands to downstream, to floodplain wetlands and river channels, considering the economic costs and benefits, and the sustainability of the watershed ecosystem. People living in and around watersheds are the main subsystem of integrated watershed management. Improving watershed management includes promoting people’s participation in decision making

[1] The TA first appeared in *ADB Business Opportunities* (Internet edition) in January 2003.

through social forestry programs carried out on publicly-owned forestland and community-managed lands.

6. Responsibility for watershed management lies with the MOFr, which lacks the institutional arrangements for carrying out this mandate. In particular, flood protection management and watershed management should be linked, especially when nonstructural means (such as reforestation, regreening, and agroforestry) can enhance cost effectiveness of flood management. The biophysical boundaries of watersheds do not always coincide with administrative boundaries and river basins. Therefore, the institutional arrangements for flood management should involve multidisciplinary and interagency partnerships. Coordination and integration requisites for watershed management and river basins have become more complex as local governments acquire more responsibilities under the decentralization process currently underway.

7. Decentralization and devolution of authority to local governments in recent years have increased the need to strengthen provincial and district capability for river basin and flood management. The central Government is responsible for managing rivers that flow across provinces. Provincial governments are responsible for managing rivers that flow across districts within the province. District and/or city governments have the authority for management of the river sections flowing through their jurisdiction, including conservation, and to use them for the benefit of the districts and/or cities concerned. To fulfill this mandate, the districts and/or city governments are responsible for preparing, in consultation with central and provincial governments, a master plan of river basin management, and for issuing all permits and documents required for river utilization. However, flood management coordination mechanisms are absent among these various local governments which share a river.

8. Where administrative boundaries separate the upper watershed area from the downstream flood-prone area, district governments in the upstream area normally do not have adequate incentives to undertake watershed management activities such as reforestation and construction of erosion control structures. Coordination mechanisms between district governments for watershed management need to be improved and incentives for upper district governments to maintain the watershed need to be established. Income generation activities for people in the upper catchment need to be developed, and community-based initiatives should be encouraged to protect watersheds on a sustainable, long-term basis.

9. Planning mechanisms to restrict land use and control development activities in flood retention basins and wetlands also need to be developed. In many areas, local people have encroached on flood retention basins, thereby reducing the wetlands continually. Flood-prone areas should not be developed for residential purposes unless the affected communities are prepared to pay for flood protection works. Watershed areas should also be protected from illegal encroachment. The different levels of protection required for agricultural lands and residential areas need to be decided.

10. Many flood warning systems do not have proper communication links to the flood-affected communities. Similarly, flood hazard maps do not exist for many flood-prone areas. These are required to plan land use and develop early warning procedures to evacuate people living in these areas. Flood forecasting and warning systems, flood hazard mapping, and evacuation planning need to be closely linked in the river basin.

11. The provincial basin management units (Balai PSDAs) under the provincial governments are responsible for the operation and maintenance of flood management facilities, but these

organizations are underfunded, with weak staff capacity, and some have only recently been established under the decentralization policy. Balai PSDA staff should be trained in planning, operation, and maintenance of flood management facilities. Cost recovery mechanisms need to be studied and used to make flood management facilities sustainable.

III. THE TECHNICAL ASSISTANCE

A. Purpose and Output

12. The purpose of the TA is to prepare a feasibility study for an investment project to prevent disasters and reduce social, economic, and environmental impacts from flooding in selected river basins in Java through community and local government participation in flood management.

13. The TA will help the Government (i) identify the best strategy to support comprehensive flood management planning for river basins; (ii) strengthen the capacity of central, provincial, and district governments and Balai PSDA staff for integrated river basin management; (iii) prioritize four river basins and prepare a feasibility study for at least two; and (iv) formulate a project for improved flood management of selected river basins in Java, for possible funding by ADB.

B. Methodology and Key Activities

14. The TA will (i) review the Government's flood management strategies, priorities, and investment plans, and recommend necessary resources for institutional strengthening, coordination improvement, policy reforms, and sustainable project financing, including cost recovery; (ii) formulate a flood management plan and watershed management plan for at least two river basins based on technical, institutional, environmental, social, economic, financial, and other relevant factors; (iii) recommend participatory approaches to selection and formulation of flood protection measures, including the role of women; (iv) integrate sound environmental management and increased social awareness into the planning, design, and implementation frameworks of flood management; (v) design the project to benefit the poor and other disadvantaged groups; (vi) assess the need for improved flood forecasting, flood warning, and disaster preparedness; (vii) prepare a plan for public awareness and emergency preparedness, with special attention to gender concerns; (viii) prepare the flood zoning map in the selected river basins; (ix) prioritize four river basins for feasibility studies in phase 2; (x) analyze the financial capability of the local government concerned and source of financing; (xi) conduct a feasibility study on the river basins; and (xii) recommend implementation mechanisms and executing and implementing agencies for the project. A preliminary project framework is in Appendix 1.

15. The TA will be implemented in two phases over 10 months. In phase 1 (3 months), the consultants will work closely with BAPPENAS, MSRI, MOFr, MOHA, and Ministry of Environment to review and assess the Government's flood management plan and/or activities, define an institutional setting for the flood management plan, and prepare a prioritized shortlist of four river basins out of the nine river basins in Java for the feasibility study in the phase 2. The criteria for selection of river basins will include: (i) frequency and severity of flooding; (ii) extent and severity of watershed degradation; (iii) level of cooperation among the regional governments within the river basin; and (iv) local governments' commitment to the proposed

project.[2] The river basins to be taken up for the TA will be identified and submitted to the TA coordination committee and ADB at least 1 week before the tripartite meeting to be held at the end of phase 1. A consultation meeting will be held with local governments in the provinces and districts where the river basins are located to discuss the scope of the project with local government officials and other key stakeholders 1 month after consultant services start. A 2-day workshop will be held before the end of phase 1.

16. The implementation arrangements to be proposed by the consultant for the ensuing investment project will take into account the functions and responsibilities of the central, provincial and district governments under the evolving decentralization process. The executing agencies (EAs) and implementing agencies (IAs) will also be identified accordingly. If several EAs and IAs are proposed, then the structure and workplan of the project management unit will be agreed among the proposed EAs and IAs before proceeding to phase 2.

17. Subject to the satisfactory conclusion of phase 1, the consultants will commence phase 2 of the TA during which feasibility studies on the river basin groups will be undertaken. The consultants will review and incorporate lessons learned from past and ongoing similar projects into the feasibility studies. The implications of the MOF Decree 35 of 2003 on cost sharing on the proposed project will be examined and adequately addressed in the feasibility study report. A 1-day workshop will be held to discuss the draft final report immediately after its submission.

C. Cost and Financing

18. The total TA cost is estimated at $1.57 million equivalent, of which $692,000 is the foreign exchange cost and $878,000 equivalent is the local currency cost. The Government has requested financing on a grant basis of (i) $250,000 equivalent from ADB's TA Funding Program; and (ii) $1 million equivalent, cofinanced by the Government of the Netherlands, to jointly finance the entire foreign exchange cost and $558,000 of the local currency cost. The Government will provide the balance of the local currency cost of $320,000 equivalent through the provision of experienced counterpart staff, office space, data, administrative and clerical services, and communications. Detailed cost estimates are in Appendix 2. The Government has been advised that approval of the TA does not commit the ADB to finance any ensuing project.

D. Implementation Arrangements

19. The EA for the TA at the national level will be the Directorate General of Water Resources (DGWR) of MSRI. DGWR will work closely with BAPPENAS, MOFr, MOF, and MOHA. Although the program will be nationally coordinated in accordance with Indonesia's policy on regional administration (Republic Law 22/1999), the program will be implemented at the decentralized levels of administration with the bulk of planning, implementation, and capacity building taking place at the local level. Close coordination and effective linkages will be established among national, provincial, and local governments.

20. A TA Coordination Committee (TACC), chaired by a senior officer in BAPPENAS, will be established to review the progress and outputs of the TA. Initially, the committee will include senior representatives from the DGWR of MSRI, and from MOFr and MOHA. In phase 2, representatives of the target provinces and the study district will join the TACC. It will meet

[2] The Government has made an initial selection of the following four river basins: (i) Ciujung-Cileman, (ii) Pekalen-Sampeyan, (iii) JERATUNSELUNA, and (iv) Progo-Opak-Oyo.

monthly during TA implementation. The Government has assured the availability of counterpart fund and staff support for timely completion of the TA.

21. Twenty-five person-months of international consultants and 65 person-months of domestic consultants will be engaged through an international consulting firm. A team leader cum integrated river basin management specialist, an international consultant, will work full-time in Indonesia for the duration of the TA study. Expertise will be required in the areas of water resources planning, integrated river basin management, hydrology, hydraulic structure engineering, sociology, rural income generation, land and watershed management and spatial planning, community participation and institutional strengthening, environment, and agricultural and natural resources economics. The consultants will be engaged in accordance with ADB's *Guidelines on the Use of Consultants* using the quality-and-cost-based selection method, and other arrangements satisfactory to ADB for engaging domestic consultants. The TA will be undertaken over 10 months commencing in November 2003. An outline of terms of reference for the consultants is in Appendix 3.

22. The TA will be implemented in a fully participatory manner. Local governments and communities, including women's groups, will be consulted to select groups of river basins to be studied in the phase 2 of the TA. Stakeholders will be consulted and their representatives invited to the first workshop to be held at the end of phase 1. A summary initial poverty and social analysis is in Appendix 4.

23. The consultants will submit three reports.[3] The inception report, to be submitted within 1 month after the TA starts, will summarize the initial findings and, if necessary, present an updated work plan to reflect specific issues identified. The interim report, to be submitted 1 week before the end of phase 1, will describe its findings and recommendations together with a draft project framework, and be reviewed in a tripartite meeting among senior government representatives, consultants, and ADB. The draft final report will be submitted 2 weeks before the end of phase 2. The consultants will submit 20 copies each of the inception and interim reports, 30 copies of the draft final report, and 20 copies of the final report. The final report will be submitted 2 weeks after the final tripartite meeting. All reports will be prepared in English, and the executive summary translated into Bahasa Indonesia. All other translations will be the responsibility of the EA and undertaken at the EA's discretion.

IV. THE PRESIDENT'S DECISION

24. The President, acting under the authority delegated by the Board, has approved (i) ADB administering a portion of technical assistance not exceeding the equivalent of $1,000,000 to be financed on a grant basis by the Government of the Netherlands, and (ii) ADB providing the balance not exceeding the equivalent of $250,000 on a grant basis, to the Government of Indonesia for preparing the Flood Management in Selected River Basins Project, and hereby reports this action to the Board.

[3] Electronic files in the CD-ROM should also be submitted.

PRELIMINARY PROJECT FRAMEWORK

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
Goal Contribute to the national goals in Indonesia: - Reduce social, economic, and environmental impacts from floods, particularly on the poor	(To be refined during TA) Reduced areas and number of flood affected poor people.	(To be refined during TA) National, regional, and local socioeconomic surveys and data	The Government remains consistently committed to reduce poverty. The country enjoys good governance and effective decentralization. Government policies and regulations are appropriate, and implementation is effective.
Purpose Reduce flooding through integrated river basin management Support poverty reduction through reducing impact of flooding on the poor by improved flood management	(To be refined during TA) Establishment of coordination mechanisms among the central and local governments and communities for flood management Creation and continued functioning of communities for flood management. Sustained institutional (government and NGO) support for flood management communities	(To be refined during TA) Monitoring of community income and activity Monitoring of local government funding and staffing, NGO activity, and district and provincial policy and regulations	Communities are willing to participate in flood management. Flood management technologies and information are available. Local and national policies and regulations conducive to flood management are implemented.
Outputs A review of government flood management plans and/or activities, and recommendations for improvement Selection of at least two river basins for the feasibility study Consultation with local governments and communities concerned on the flood management plan Feasibility studies for at least two river basins for the project Financial capability analysis of the local government concerned Clarification of fund flow to local governments and communities	Data on the river basins and incidence of poverty (at inception report stage) Establishment of criteria for selection of at least two river basins Completion of feasibility studies for the project (at draft final report stage) Evaluation of acceptance level of communities and local governments Completion of flood management plan in selected river basins (at draft final report) Funding mechanisms for project implementation (at draft final report stage)	Regular TACC meetings TA inception, interim, and final tripartite meetings Two workshops Consultation meetings with communities and local governments	Timely TACC meetings, and TA supervision missions

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions and Risks
Activities Analyze context of flood management in Indonesia Compile information on flood management and poverty Review existing policy, legislation, and regulations Review and document existing and/or completed community-based projects Identify successful community-based watershed management opportunities Develop a participatory approach for working with communities Assess capacity and needs of central, local governments, communities, and NGOs Prepare project framework	Preparation of TA inception, interim, draft final, and final reports To start in November 2003, for 10 months, as outlined in TA terms of reference and time frame	Timely presentation of reports TA review mission Submission of inception report 1 month after project starts Submission of interim report 1 week before the end of phase 1 Submission of draft final report 2 weeks before the end of phase 2	Satisfactory performance of consultants
Inputs Consulting services Counterpart involvement Beneficiary participation TA financing by Government of the Netherlands and ADB, and local cost financing by the Government of Indonesia	Fielding of 25 person-months of international and 65 person-months of domestic consultants for 10 months, split into two phases Active involvement of TACC, DGWR, and local government staff Beneficiary participation in the study of communities in the two river basins $1 million financing by the Government of the Netherlands $250,000 financing by ADB $320,000 local and in-kind financing by the Government of Indonesia	TACC reviews and TA supervision missions Progress report of the consultants	Timely fielding of consultants, adequate provision of financing and counterpart support

NGO = nongovernment organization, TA = technical assistance, TACC = technical assistance coordination committee, ADB = Asian Development Bank, DGWR= Directorate General of Water Resources.

COST ESTIMATES AND FINANCING PLAN

($'000)

Item	Foreign Exchange	Local Currency	Total Cost
A. Asian Development Bank Financing[a]			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	105.0	0.0	105.0
ii. Domestic Consultants	0.0	75.0	75.0
b. International Travel	10.0	0.0	10.0
c. Local Travel (land and air)	0.0	5.0	5.0
d. Reports and Communications	5.0	1.0	6.0
2. Miscellaneous Administration and Support Costs	0.0	5.0	5.0
3. Representative for Contract Negotiations	5.0	0.0	5.0
4. Contingencies	20.0	19.0	39.0
Subtotal (A)	**145.0**	**105.0**	**250.0**
B. Cofinancing by the Government of the Netherlands			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants	420.0	0.0	420.0
ii. Domestic Consultants	0.0	250.0	250.0
b. International Travel	35.0	0.0	35.0
c. Local Travel (land and air)	0.0	28.0	28.0
d. Reports and Communications	7.0	3.0	10.0
2. Surveys			
a. Socioeconomic Assessment	0.0	30.0	30.0
b. Technical Investigations[b]	0.0	30.0	30.0
c. Purchase of Satellite Images and Aerial Photos	10.0	0.0	10.0
3 Office and Technical Equipment[c]	15.0	2.0	17.0
4. Workshops/Stakeholder Consultations	0.0	50.0	50.0
5. Miscellaneous Administration and Support Costs[d]	0.0	10.0	10.0
6. Contingencies	60.0	50.0	110.0
Subtotal (B)	**547.0**	**453.0**	**1,000.0**
Total Aid Fund Financing (A+B)	**692.0**	**558.0**	**1,250.0**
C. Financing by the Government of Indonesia			
1. Office Accommodation, Transport, Logistics	0.0	130.0	130.0
2. Remuneration and Per Diem of Counterpart Staff	0.0	100.0	100.0
3. Information, Data, and Security	0.0	90.0	90.0
Subtotal (C)	**0.0**	**320.0**	**320.0**
Total	**692.0**	**878.0**	**1,570.0**

[a] Financed by ADB's TA funding program.

[b] Includes topographic survey, hydrological measurements, geotechnical investigations, and soil surveys.

[c] Includes computers, software, communications, survey, and investigation equipment.

[d] Includes support and translation services.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE

A. Phase 1: Review of Flood Management Plan and/or Activities and Selection of River Basin Groups

1. Initial Activities

1. The consultants will compile and review data on flood management in river basins in Java. Such data will include, but not be limited to, (i) central and local government policies, laws, and regulations on integrated river basin management, water resources, and flood management under the decentralization policy; (ii) central and local government flood management objectives, investment priorities, and programs; (iii) relevant studies and reports of previous, ongoing, and proposed projects; (iv) statistical data relating to climatic, hydrological, geographical, and socioeconomic conditions in the river basin groups, with emphasis on people who either benefit from or are harmed by floods; (v) current land use in the basin and land title issues in watershed areas; (vi) environmental conditions and safeguards; (vii) current standards and procedures for flood management; (viii) current watershed management activities; (ix) current institutional arrangements for flood management, including financing of capital investments, operation and maintenance costs, and cost recovery; (x) preparedness of the community to participate in flood management; and (xi) lessons learned from ongoing or completed flood control projects funded by the Asian Development Bank (ADB) and other funders.

2. The consultants will have a series of consultation meetings with communities and local governments in the river basins—Ciujung-Cileman in Banten Province, Pekalen-Sampeyan in East Java, JERATUNSELUNA in Central Java, and Progo-Opak-Oyo in Yogyakarata and Central Java Province—to evaluate the level of acceptance of flood management. Potential beneficiaries and those who may be harmed by the works will be interviewed to help design the social surveys to be conducted during the phase 2 of the technical assistance (TA). Based on the field reconnaissance and information collected, a prioritized list for the selection of at least two river basin groups in phase 2 will be prepared. The inception report will describe the preliminary findings and recommend revisions to the work plan.

2. Review and Assessment of Flood Management Plan/Activities

3. The consultants will review and assess the central and local governments' flood management plans and/or activities to arrive at a cost-effective, technically sound, and socially acceptable plan.[1] The following will be examined:

(i) appropriateness of objectives and strategies;
(ii) institutional capacity and proposals to overcome identified weaknesses;
(iii) adequacy of legal and regulatory frameworks, and procedures for endorsement;
(iv) adequacy of financial resources of agencies responsible for aspects of flood management;
(v) socioeconomic analyses of how the proposed flood protection measures will benefit the community, especially the poor and other disadvantaged groups;
(vi) adequacy of environmental safeguards and procedures, and capacity to manage environmental plans and monitor environmental conditions;

[1] If local governments do not have flood management plans, the consultant will prepare a draft plan for the river basin concerned.

(vii) adequacy of provisions relating to land-use planning, flood hazard zoning and mapping, risk assessment, and prevention of encroachment on unsafe areas;
(viii) adequacy of emergency response and flood recovery measures; and
(ix) status of operation and maintenance of flood control facilities.

3. Recommendations

4. The consultants will prepare a report describing the major elements of the comprehensive flood management plan for the river basins, including recommendations to modify or improve the Government's plan and/or activities. The report will cover (i) planning measures; (ii) development and land-use controls; (iii) structural measures; (iv) transfer of payment (compensation) from downstream beneficiaries to upstream beneficiaries; (v) institutional issues of responsibility for flood management; (vi) effectiveness of nonstructural measures, (vii) role of local governments, communities, and Balai PSDA; (viii) effective coordination mechanisms between district governments for watershed management; and (ix) issues related to financing mechanisms for on-lending and/or on-grant to local governments in which should be mentioned in the independent section of the report, in relation to the decentralization policy (Republic Law 22/1999 and 25/1999) and the decision of minister (KEPMEN 35). The consultants should coordinate closely with BAPPENAS on ongoing flood control policy formulation.

5. The consultants will support all conclusions and recommendations with analyses of different options, and present the findings in the interim report, which will also set out programs (including terms of reference, costs, and implementation arrangements) for any additional surveys, investigations, and studies to be carried out during the phase 2 or as part of the project. A tripartite meeting will be held to review the interim report, following which the Government and ADB will jointly decide on at least two river basin groups for feasibility study during the phase 2.

4. Workshops and Local Government Consultation

6. Since the TA will be implemented in a fully participatory manner, consultation meetings must be held with stakeholders, including women's groups. The local government consultation meeting will be held to explain the scope of the project to local government officials 1 month after consultant services start. Based on the data collection and detailed selection criteria set forth by the consultant, the prioritized shortlist of the river basin groups should be submitted to the TA coordination committee and ADB one week before the tripartite meeting to be held at the end of the phase 1. A 2-day workshop will be held at the end of the phase 1 to discuss the concept of flood management and the selection of at least two river basin groups for the phase 2. A 2-day workshop will be held at the end of the phase 1 to discuss the concept of flood management and the selection of river basin groups.

B. Phase 2: Preparation of an Investment Project

1. Feasibility Studies

7. The consultants will undertake feasibility studies for the subprojects to formulate the major works components, together with their costs and justification. Where possible, the consultants will use existing studies and reports and undertake supplementary studies to update them as necessary. The proposed scope should be presented to the communities, and their comments incorporated in the scope. The consultants will consider the need for (i) capacity building of local government agencies, (ii) community participation for flood management, (iii)

watershed management, (iv) public awareness for flood management, and (v) structural measures for flood management in each subproject.

8. A consultant will undertake a social analysis for each selected river basin to identify (i) groups who will benefit from and/or use the proposed works, (ii) groups who may be adversely affected by the works, (iii) indigenous people, (iv) gender concerns, and (v) other major stakeholders.[2] Each social analysis will describe the needs, demands, and absorptive capacity of the groups, and will consider the need to compensate those likely to be adversely affected. Socioeconomic data, including current urban and rural population levels and migration trends, growth predictions, presence of minority peoples, land use and tenure, employment, gender issues, division of labor, and productivity and family incomes will be derived from secondary sources supplemented by interviews and rapid rural appraisals. Particular attention will be given to discerning differences in the extent and severity of poverty among beneficiaries and the population as a whole. An assessment of the impact on indigenous people should be prepared in accordance with ADB's *Operations Manual on Indigenous Peoples.*

9. Consultants will prepare records of all interviews and discussions, with a summary of the major points of discussion and the views of the group concerned. Socioeconomic profiles will be prepared for vulnerable groups and for all groups who may be adversely affected by the project. For each selected river basin, the consultants will describe the following:

(i) effective measures to reduce the vulnerability of the poor, especially women, to floods;
(ii) beneficiaries' willingness and capability to contribute in cash or kind to implement and maintain works;
(iii) procedures to be adopted during project implementation to (a) ensure beneficiary and stakeholder participation in selection and formulation of works, (b) respect cultural needs and existing patterns of livelihood, and (c) enhance the positive impacts of project works;
(iv) institutional development and training needs under the project;
(v) additional interventions that may be needed to complement works proposed under the project (such as improved drinking water supplies, collection and disposal of solid and liquid wastes, and improved treatment of effluents discharging to surface and groundwater bodies); and
(vi) benefit and poverty impact monitoring activities, disaggregated by gender wherever possible.[3]

10. The consultants will prepare a resettlement policy framework, which will cover all land acquisition and resettlement activities of the project. For any structures that may entail significant land/house acquisition or disruption of livelihood, the consultants will prepare a resettlement plan following the requirements of the ADB's *Handbook on Resettlement: A Guide to Good Practice*. The consultant will prepare the land acquisition and resettlement policy framework to be applied to the project in consultation with the central, provincial, and district governments.

11. The consultants will prepare a gender action plan to reflect the gender analysis of the role of men and women during and after floods, including recommendations for strategies and activities to reduce the economic burden of women during and after floods.

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[2] The procedures to conduct social analyses using rapid appraisal techniques are described in ADB's *Handbook on Poverty and Social Analysis* (December 2001).
[3] Prepared in accordance with ADB's *Handbook on Benefit Monitoring and Evaluation*.

12. In accordance with ADB's environmental policy, recently approved by the Board[4], the consultants will prepare an initial environmental examination and/or environmental impact assessment, if warranted, following the *Environmental Assessment Requirements of ADB* (March 1998). The environmental assessments should identify all positive and negative environmental and social impacts. The consultants will recommend measures (including changes in the design) to eliminate, offset, or reduce adverse impacts to an acceptable limit. Wherever feasible, the consultants will identify complementary works to enhance the positive environmental impacts of proposed works. Costs and benefits of all such measures and complementary works will be estimated.

13. A draft environmental management plan will be prepared for each subproject to describe the procedures for environmental management and monitoring, including institutional arrangements, tasks and implementation schedules, estimated costs, reporting arrangements and schedules, and any special measures such as training, public involvement activities, and so forth. The plans will be finalized during the detailed design phase.

14. The consultants will analyze local governments' capability to fund their contribution to the proposed project, and their sources of funds. The analyses should follow the rules and regulations of the government financing policy for local governments (KEPMEN 35).

15. The consultants will analyze the economic benefits and costs and will calculate the economic internal rate of return, perform sensitivity and risk analyses, and calculate switching values for each subproject in accordance with ADB's *Guidelines for Economic Analysis of Projects* and *Economic Analysis of Environmental Impacts of Development Projects.*[5] COSTAB software program should be used to estimate the project cost. The consultants will also examine the distribution of project costs and benefits, in financial and economic terms, allocated to the various stakeholders, and estimate the distribution of project effects on the poor to determine their poverty impact (Appendix 4), as outlined in ADB's *Handbook for Integrating Poverty Impact Assessment in the Economic Analysis of Projects*.

2. Formulation of a Flood Management Project

16. The consultants will formulate a flood management project in the selected river basins. Specific attention will be given to (i) financing plans and mechanisms for cost recovery; (ii) arrangements for operation and maintenance of project facilities with capacity-building mechanisms; (iii) framework for monitoring and evaluation of project benefits; (iv) flood hazard mapping to determine the likely effects of flooding in the basins and develop a flood management strategy to minimize the economic cost of flooding rather than try to prevent it; (v) community participation in flood management, emergency actions, and rehabilitation; (vi) flood forecast and early flood warning system; (vii) development of flood preparedness in the communities; (viii) flood insurance mechanisms; (ix) watershed management, including income generation and community-based land and natural resources management; (x) financial sustainability of asset management of river infrastructure; (xi) restriction of land use in the basin; (xii) children's education program on community participation in flood management; (xiii) gender concerns in flood management; (xiv) contract packaging (including procurement arrangements), work schedules, and detailed implementation arrangements; and (xv) development of a logical framework along with the progress of the study. The consultant will recommend executing

[4] R154-02: Environment Policy, approved in November 2002.
[5] The consultant's economist will visit ADB before mobilization on site to receive guidance on the economic analyses to be conducted.

agencies with funding mechanisms. Right after submission of the draft final report, a second workshop will be held to discuss it with about 50 stakeholders. The outcome of the workshop will be reflected in the final report.

C. Required Expertise

17. The international consultants required for the study are the following: (i) integrated river basin management specialist/team leader (10 person-months), (ii) flood management planner (3 person-months), (iii) hydraulic structure engineer (3 person-months), (iv) sociologist/resettlement specialist (4 person-months), (v) environment specialist (3 person-months), and (vi) economist (2 person-months). The domestic consultants required are the following: (i) community development specialist/co-leader (10 person-months), (ii) flood management specialist (8 person-months), (iii) watershed management specialist (4 person-months), (iv) economist (4 person-months), (v) sociologist/rural income generation specialist (6 person-months), (vi) legal specialist (2 person-months), (vii) environment specialist, (viii) resettlement/institutional management specialist, (ix) financial analyst (2 person-months), (x) hydrologist (5 person-months), (xi) hydraulic structure engineer (7 person-months), and (xii) database/geographic information systems specialist (5 person-months).

D. Reporting

18. The final report will cover the project rationale, objectives and scope, detailed cost estimate, project organization, implementation and management arrangements, socioeconomic and environmental aspects, policy recommendations, and a proposal for project impact monitoring and evaluation. The main report will follow the format of *ADB's Report and Recommendation of the President*,[6] and will include detailed annexes covering the consultants' work and analyses. These annexes will include the project framework, sector and subsector analysis, summary of external assistance, cost estimates and financing plan, implementation schedule, proposed project organization chart, financial and economic analysis, poverty reduction and social strategy, indigenous people's development plan, initial environmental examination, benefit monitoring and evaluation framework, outline terms of reference for consultant services, and lessons learned from previous flood management projects in Indonesia and from ADB-financed projects in other countries. The report will also include a map of the project area showing the location of proposed project sites.

[6] Prepared in accordance with Appendix 8 of ADB's *Business Processes for the Reorganized ADB* (March 2002).

SUMMARY INITIAL POVERTY AND SOCIAL ANALYSIS

A. Linkages to the Country Poverty Analysis

Sector identified as a national priority in country poverty analysis?	Yes	Sector identified as a national priority in country poverty partnership agreement?	Yes

Contribution of the sector/subsector to reduce poverty in Indonesia:

Poverty incidence soared from 14.7% in early 1997 to a peak of 23.5% in early 1999, demonstrating the vulnerability of the poor to inflationary shocks, especially to food price increases. Many communities, particularly those living on or near degraded watersheds, have little access to land and other resources, and suffer poverty levels as high as 80%. One project component will provide improved livelihood and sustained income-generating opportunities to such communities by increasing production and marketing of legal forest products and food as a result of increased access to land and improved management of resources. One project component will focus on creating and supporting community management groups, and sustaining institutional (government and nongovernment) arrangements to support communities.

B. Poverty Analysis **Proposed Classification: Environment**

What type of poverty analysis is needed?

During the initial phase of the project preparatory technical assistance (PPTA), the consultants will compile available data on poverty and degraded lands, using geographic information systems and poverty mapping techniques to link the information for use in selected river basins and communities, and to provide a baseline database to monitor the project. The consultants will also review and document ongoing and completed community-based land and natural resources management activities to identify successful schemes, on the basis of which at least two river basins will be selected for further in-depth study as subprojects.

A poverty analysis will examine (i) past and present negative impacts of floods and related disasters/degradation on livelihoods of people; (ii) their coping strategies to address short- and long-term impacts (e.g. migration; selling children, livestock, and land; borrowing money); and (iii) gender dimensions of (i) and (ii). The study will also estimate the expected impact of project interventions on poor communities, other stakeholders (including intermediaries and nongovernment organizations [NGOs]), and the government (distinguishing between local governments and the national Government). The study will also examine the distribution of project costs and benefits, in financial and economic terms, allocated to the various stakeholders, and estimate the distribution of project effects on the poor to determine their poverty impact, as outlined in ADB's *Handbook for Integrating Poverty Impact Assessment in the Economic Analysis of Projects*.

C. Participation Process

Stakeholder analysis: During the review of ongoing and completed schemes, the consultants will identify and consult all stakeholders to determine the roles and functions of the target groups and to understand supply chains to markets. The consultants will undertake a rapid rural appraisal or similar approach to gather background information on the communities, meet with key individuals and other community members, and engage in dialogue to identify development needs and constraints. The outcome of this analysis will form the basis to propose selection criteria and specific mechanisms for community inclusion, and identify target communities under the project.

Participation strategy required: The community participation strategy will be developed during the phase 2 of the PPTA, including cost-sharing arrangements, operation and maintenance arrangements, and community-level training mechanisms considering women's participation. The technical assistance (TA) will be implemented in a fully participatory manner, and the consultants will organize at least two participatory stakeholder workshops during TA implementation to discuss the approach and findings with key central, provincial, and district agencies; representatives of target communities; external agencies; NGOs; research organizations; and other interested parties.

D. Potential Issues

Subject	Significant, Not Significant, Uncertain, None	Strategy to Address Issues	Plan Required
Resettlement	Significant	The nature of the proposed project will necessitate land acquisition. Displacement from assets, and loss of income, livelihood, and other resources are anticipated. The magnitude of land acquisition and displacement is unknown at this stage. The PPTA will review options to avoid or	A resettlement plan will be prepared for each river basin.

		minimize displacement, prepare in-depth social analysis of any displaced groups, develop mechanisms to ensure participation of affected groups in choice of compensation and rehabilitation options, with scope for monitoring and evaluation.	
Gender	Significant	Hardship during floods is more severe among poor households. Women suffer the most as they must clean up after the floods. Thus, the project will benefit women.	A gender action plan will be prepared during PPTA.
Affordability	Not significant	Cost recovery mechanisms for flood management will be discussed during the PPTA and implemented under the project, considering beneficiaries' ability to pay.	Beneficiaries' ability to pay will be assessed during the PPTA.
Labor	None	People severely affected by the project, and identified vulnerable groups will have the highest priority access to project-related jobs.	None
Indigenous People	None	The project will not adversely impact a specific ethnic and/or caste group.	None
Other Risks/ Vulnerabilities	None		None