



Technical Assistance Report

Project Number: 38401
December 2006

Managing Hazardous Wastes

ABBREVIATIONS

ADB	–	Asian Development Bank
BBIN	–	Bangladesh, Bhutan, India, and Nepal
DMC	–	developing member country
DOE	–	Department of Environment
MOEF	–	Ministry of Environment and Forest
MOSTE	–	Ministry of Science, Technology, and Environment
POP	–	persistent organic pollutant
PPP	–	public-private partnership
RCSP	–	regional cooperation strategy and program
RETA	–	regional technical assistance
SASEC	–	South Asia Subregional Economic Cooperation
UNEP	–	United Nations Environment Programme

TECHNICAL ASSISTANCE CLASSIFICATION

Targeting Classification	–	Targeted intervention
Sector	–	Water Supply, Sanitation, and Waste Management
Subsectors	–	Waste management
Theme	–	Environmental sustainability, regional cooperation, governance, and private sector development
Subtheme	–	Cleaner production/ industrial pollution control, global and trans-boundary environmental concerns and issues, environmental policy and legislation, public governance, and public-private partnerships

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NOTE

In this report “\$” refers to US dollars

I. INTRODUCTION

1. Regional technical assistance (RETA) on Managing Hazardous Wastes,¹ previously known as Review of Regulation on Hazardous Wastes for Bangladesh, Bhutan, India, and Nepal (BBIN), was proposed by the Environmental Working Group of South Asia Subregional Economic Cooperation (SASEC) at its special meeting in 2002, and endorsed at the Country Advisors Meeting in 2005. The proposed RETA is included in the regional cooperation strategy and program (RCSP) for 2006–2008.

2. Fact-finding missions were carried out from 24 to 30 November 2005 in Bhutan and Nepal, from 24 to 26 February 2006 in Bangladesh, and from 29 to 31 March 2006 in India, to reach agreement with the governments on the impact, outcome, outputs, implementation arrangements, cost, financing arrangements, and outline terms of reference of the RETA. The design and monitoring framework is presented in Appendix 1.

II. ISSUES

3. In many developing countries, including Bhutan, Bangladesh, Nepal, and India, increased economic activity can have negative impacts on the environment. Economic activities associated with industry, agriculture, health services, and other service sectors generate chemical and hazardous wastes, which if left unmanaged, can lead to serious environmental problems that threaten public health and endanger economic sustainability.

4. Problems associated with the management of waste, especially hazardous waste, vary in the four RETA member countries. In Bhutan, where the environment is still intact and pristine, problems associated with hazardous waste are emerging slowly but steadily.² Bhutan is still in the preliminary stage with regard to hazardous waste management. A proper system for hazardous waste collection, separation, transportation, and disposal needs to be put in place before public health is threatened. Although several studies have been carried out to assess the improper management of hazardous wastes, Bhutan has not yet established institutional and legal frameworks to effectively address the problem. In Nepal, several studies and workshops on managing hazardous wastes have been carried out, and the hazardous, polluting industries and activities have been identified.³ Nepal's next step is to develop policies under the Environmental Protection Act. In Bangladesh, pollution associated with industrial activities has been identified as a major environmental concern.⁴ Some rivers have been severely polluted. The industrial activities have contributed to the increase of wastes disposed into the environment. The Bangladesh Environmental Conservation Act and Rules have put in place measures to address pollution problems; however, a clear strategy and policy as well as practical guidance have not yet been established. India, on the other hand, has a comprehensive regulatory and institutional framework, as well as technical guidelines to handle various types of hazardous wastes. However, increasing industrial activities are also facing significant challenges in disposing of hazardous wastes, and therefore more appropriate and modern facilities are required.

5. The governments have taken steps to minimize pollution associated with chemical and hazardous wastes, not only at the country level, but also internationally, as parties of the Basel

¹ The RETA first appeared in *ADB Business Opportunities* on 10 August 2006.

² National Environment Commission, 1999. *Environmental Assessment of Existing Industries in Bhutan*.

³ Ministry of Population and Environment. 2004. *Initial Inventory of Hazardous and Toxic Wastes*. Nepal.

⁴ United Nations Environment Programme. 2001. *State of the Environment*.

Available: http://www.rrcap.unep.org/reports/soe/bhutan_toc.pdf

Convention on Transboundary Movement of Hazardous Wastes and their Disposal, and the Stockholm Convention on Persistent Organic Pollutants.⁵ As parties of these conventions, Bhutan, Nepal, and Bangladesh have benefited from training and seminars. In addition, Bhutan was able to export around 32.19 metric tons of obsolete pesticides to Switzerland for treatment and safe disposal. However, while these conventions extend invaluable assistance to their parties, they also impose strict obligations. Such obligations include undertaking real efforts at the country level to handle chemical and hazardous wastes prior to ratification. The goal is to combine their efforts to reduce pollution associated with chemical and hazardous wastes.

6. The five main steps in managing hazardous wastes at the national level⁶ are (i) identifying the problems; (ii) designating a lead agency; (iii) promulgating rules and regulations; (iv) developing treatment and disposal facilities; and (v) creating compliance and enforcement programs. Clearly, the four RETA member countries need different levels of interventions to institutionalize the management of hazardous wastes. Bhutan would need to (i) complete a national inventory of the types and quantities of hazardous wastes, (ii) draft policy to cover the institutional and regulatory framework to manage hazardous wastes, (iii) develop appropriate technical guidelines for hazardous waste management, and (iv) develop a mechanism for institutional strengthening and capacity development. Bangladesh and Nepal would need to (i) update their hazardous waste inventories as a basis for promulgating rules and regulations; and (ii) develop technical guidelines on handling, treating, transporting, and disposing hazardous wastes as a basis to identify the potential amount and type of wastes that need special treatment and disposal facilities. Meanwhile, India needs to (i) review the capacity of its hazardous waste treatment facilities, including facilities involving public-private partnerships; (ii) review the existing institutional and regulatory framework to create effective compliance programs by taking into account that some hazardous wastes have economic value; and (iii) build capacity by organizing trainings that will also be shared with other RETA member countries.

7. Considering the range of issues, problems, degrees of effort, and the immediate needs for managing hazardous wastes, this RETA will serve as a basis for strengthening cooperation among the four countries. Cooperation will be fostered not only through the sharing of knowledge, but also through the identification of ways to use common facilities for safely treating, transporting, and disposing hazardous wastes. In sharing knowledge, Bhutan, Bangladesh, and Nepal will benefit from India's lessons in regulating the management of hazardous wastes. Ultimately, these four countries are expected to have compatible rules and guidelines on managing hazardous wastes. In terms of using common facilities, India has already made efforts to explore the participation of the private sector in facilitating the disposal of hazardous wastes in these countries. India will benefit also from knowing which hazardous wastes will potentially be generated by its neighboring countries. In this context, future investment in common treatment facilities for hazardous wastes may be feasible. Therefore, it is clear that the activities developed under this RETA will be consistent with the program and objective of the RCSP 2006–2008.

⁵ Out of the four RETA member countries, only India has ratified these three international conventions.

⁶ Center for Risk Management. 1999. *The Evolution of Hazardous Waste Programs: Lessons from Eight Countries*. Washington, DC: Resources for the Future.

III. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

8. The RETA will assist the four member countries to improve and develop policy and regulations to effectively manage hazardous wastes. Therefore, it is expected that the RETA will contribute to the overall reduction of pollution related with hazardous wastes.

B. Methodology and Key Activities

9. To achieve the main outcomes, the following outputs and activities have been identified.

10. **Output 1: Waste inventory reports for Bangladesh, Bhutan, and Nepal.** Inventories of hazardous wastes will be completed for Bhutan, Bangladesh, and Nepal. The types and quantities of hazardous wastes will be recorded for each country. As part of the inventory process, the consultants will review existing information on waste generation sources, examine lessons from other countries, conduct field surveys, and hold local workshops with potential stakeholders. They will also identify who is doing what and who will be expected to do what, including identifying the gaps and needs for improving management of hazardous wastes. On this basis, the institutional framework to manage hazardous wastes will be strengthened and developed.

11. **Output 2: Draft policy and rules to manage hazardous waste for Bangladesh, Bhutan, and Nepal.** In formulating policy and rules for managing hazardous wastes in Bangladesh, Bhutan, and Nepal, the hazardous waste inventories will be used as a basis for (i) identifying specific technical procedures for treating, storing, transporting, and disposing hazardous waste; (ii) identifying wastes that will be subject to regulation; and (iii) identifying and developing an appropriate institutional framework to manage hazardous wastes. The policies and rules of other countries, including India, will be studied, and local workshops will be held to allow stakeholders to voice their opinions.

12. **Output 3: Report on India's hazardous waste regulations, with recommendations on incorporating reuse and recycling principles.** An in-depth review of India's regulations and technical guidelines will be carried out, and several small workshops involving representatives from waste generators will be held, to recommend practical and economical ways to reuse and recycle waste. Although output 3 is designed specifically for India, the other RETA member countries will also benefit if their inventories identify hazardous wastes that can be reused or recycled.

13. **Output 4. Report on potential involvement of private sector in managing hazardous wastes.** The potential involvement of the private sector in managing hazardous wastes will be explored through the following: (i) visits to treatment and disposal facilities in the region that have been built and/or operated by the private sector, (ii) assessment of existing financial facilities, (iii) seminars and workshops to gather inputs from relevant stakeholders, and (iv) outputs from RETA 6292: *Promoting Environmental Investment in Asia and the Pacific*.⁷ These activities are expected to be used as a basis to develop a business proposal for private sector involvement in handling hazardous wastes.

⁷ RETA 6292 (ADB. 2005. *Technical Assistance for Promoting Environmental Investment in Asia and the Pacific*. Manila), approved 28 December.

14. **Output 5: Training modules for managing hazardous wastes.** Training modules that provide instruction on preparing inventories and developing technical and procedural guidelines for hazardous waste treatment, storage, and disposal facilities will be developed.

15. The RETA design is based on several assumptions essential for successful implementation: (i) regional workshops for sharing knowledge between RETA member countries on handling hazardous wastes are carried out on time; (ii) each government will consistently support the inventory of wastes; (iii) each government will consistently support the formulation of guidelines/regulations that will reduce pollution associated with hazardous wastes; (iv) coordination among the departments that contribute to generating hazardous wastes is established; and (v) relevant stakeholders, such as financial agencies and waste generators, actively participate.

16. **Output 6: Mechanism to maintain network among member countries.** It is also expected that the RETA will enable these four countries to establish and maintain a hazardous waste network for future cooperation and knowledge sharing. In this context, the RETA will also be implemented in line with ADB's efforts in developing knowledge hubs under ADB's RETA on Establishment of Regional Knowledge Hubs.⁸

C. Cost and Financing

17. The TA is estimated to cost \$424,000 equivalent. The TA will be financed on a grant basis by ADB's TA funding program for \$400,000. The participating governments will provide office accommodation, counterpart staff, and miscellaneous expenses equivalent to \$24,000. The TA will finance two regional workshops, eight country trainings and workshops, international and national consulting services, and three computers and printers for activities in Bangladesh, Bhutan, and Nepal. The detailed cost estimates are in Appendix 2.

D. Implementation Arrangements

18. ADB will be the Executing Agency for the RETA and will work closely with the environment ministries of the participating countries. In-country focal points will be (1) Bangladesh's Department of Environment, Ministry of Environment and Forest; (ii) Bhutan's National Environment Commission; (iii) Nepal's Environmental Division of the Ministry of Environment, Science, and Technology; and (iv) India's Ministry of Environment and Forest.

19. One international consultant with expertise in hazardous waste management (4 person-months) will be recruited on an intermittent basis. National consultants (30 person-months; average 7.5 person-months for each country) will also be recruited on an intermittent basis. National consultants will include (i) hazardous waste management specialists for all four countries; (ii) environmental policy specialists for Bangladesh, Bhutan, and Nepal; and (iii) a public-private partnership specialist for India. The international consultant will work closely with all national consultants and will act as resource person in undertaking waste inventory as well as in developing guidelines/rules for managing hazardous wastes, including exploring the role of the private sector in managing hazardous wastes and formulating guidelines and policies. The national hazardous waste management specialists will carry out the inventory of hazardous wastes and will work closely with the international consultant to develop guidelines to manage hazardous wastes. The national environmental policy specialists will be responsible for

⁸ RETA 6295 (ADB, 2005. *Technical Assistance for the Establishment of Regional Knowledge Hubs*. Manila), approved in December.

formulating policy to manage hazardous wastes. The national private sector consultant will explore the role of the private sector in waste management and develop guidelines that encourage greater participation. Outline terms of reference are in Appendix 3. The consultants will be engaged by ADB in accordance with the *Guidelines on the Use of Consultants* (2006). Computers will be purchased locally and after the completion of the RETA will be granted to the implementing agencies in Bhutan, Bangladesh, and Nepal, in accordance with ADB's *Procurement Guidelines* (2006).

20. The RETA will be implemented over 12 months, beginning in January 2007. For each country, the national consultant will submit (i) an inception report within 4 weeks, (ii) brief monthly progress reports, (iii) a brief midterm report, and (iv) a final report (hard and soft copies) at the end of the RETA. The international consultant will submit (i) an inception report within 3 weeks, (ii) progress reports after completing assignments related to RETA milestones, and (iii) a final report that summarizes the activities and recommendations of the national consultants. National workshops will be held to allow stakeholders to voice concerns, and regional workshops will be held to share lessons and best practices of countries in the region.

IV. THE PRESIDENT'S DECISION

21. The President, acting under the authority delegated by the Board, has approved the provision of regional technical assistance not exceeding the equivalent of \$400,000 on a grant basis for Managing Hazardous Wastes, and hereby reports this action to the Board.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Impact Improvement of management of handling pollution especially related with hazardous wastes in this subregion</p>	<p>Reduced levels of hazardous waste disposed into the environment</p>	<p>Monitoring reports from the environment ministries</p>	
<p>Outcome The approach to manage hazardous wastes is institutionalized and the system to prevent pollution associated with hazardous wastes is improved</p> <p>Countries within the subregion share their knowledge on handling hazardous wastes</p>	<p>Institutional frameworks for managing hazardous wastes are established for Bhutan, Bangladesh, and Nepal</p> <p>Policy and rules for managing hazardous wastes are available in Bangladesh, Bhutan, and Nepal</p> <p>India adopts reuse and recycle principles to manage hazardous wastes and includes them in the regulatory framework</p> <p>Ways to involve the private sector in waste management are identified</p> <p>Hazardous waste network for BBIN is established</p>	<p>Consultant progress reports</p> <p>Consultant progress reports</p> <p>Consultant progress reports and reports from local workshops</p> <p>Consultant progress reports</p> <p>International consultant progress reports</p>	<p>Assumptions</p> <ul style="list-style-type: none"> • Regional workshops for sharing knowledge on handling hazardous wastes are carried out on time. • Governments consistently support the inventory of waste. • Governments consistently support the formulation of guidelines/rules as part of the effort to reduce pollution associated with hazardous wastes. • Coordination among the departments that contribute to generating hazardous wastes is available. • Waste generators actively participate. • RETA member countries continue to participate in the network/forum to exchange knowledge. • ADB is willing to support the network/forum.
<p>Outputs</p> <p>1. Waste inventory reports for Bangladesh, Bhutan, and Nepal</p> <p>2. Draft policy and rules for managing hazardous wastes in Bangladesh, Bhutan and Nepal</p>	<p>Inventory reports are available by September 2007; each Government accepts the results.</p> <p>The draft policy and rules are available by October 2007; each Government endorses the proposed policy for further adoption by the country.</p>	<p>Consultant progress reports and reports from local workshops</p> <p>Consultant progress reports and reports from local workshops</p>	<p>Assumptions</p> <ul style="list-style-type: none"> • Consultants recruited on time • Continued support from the governments • Availability of counterpart staff • Active participation of waste generators and other relevant stakeholders • RETA member countries continue to participate in the network/forum to exchange knowledge.

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>3. Report on India's hazardous waste regulations, with recommendations on incorporating reuse, recycling, and recovery principles</p> <p>4. Report on potential involvement of private sector in managing hazardous wastes</p> <p>5. Training modules for managing hazardous wastes</p> <p>6. Mechanism to maintain the network</p>	<p>Report is available by September 2007 and is accepted by the Government of India.</p> <p>The business proposal is prepared and endorsed by the Government of India by October 2007.</p> <p>Training modules are available and endorsed by the governments by May 2007.</p> <p>Available after the first regional workshop in March 2007</p>	<p>Consultant progress reports and reports from local workshops</p> <p>Consultant progress reports and reports from local workshops</p> <p>Consultant progress reports and reports from local workshops</p> <p>Consultant progress reports</p>	
<p>Activities with Milestones</p> <ol style="list-style-type: none"> 1. Obtain government concurrences for the RETA paper by December 2006. 2. Recruit consultants in February 2007. 3. Hold the first regional workshop and study tour of hazardous treatment facilities in Bangkok in March 2007. 4. Prepare and conduct inventories of hazardous wastes in Bangladesh, Bhutan, and Nepal from March to August 2007. 5. Review India's rules and regulations from March to May 2007. 6. Prepare training modules from February to April 2007. 7. Conduct study to identify ways to involve the private sector in managing hazardous wastes (start in February 2007). 8. Hold final regional workshop in ADB Headquarters, Manila in November 2007. 			<p>Inputs ADB: \$400,000</p> <ul style="list-style-type: none"> • International consultant (4 person-months) and national consultants (30 person-months) - \$247,000 • Equipment - \$15,000 • Seminars and/or workshops - \$76,000 • Survey - \$40,000 • Miscellaneous - \$2,000 • Contingencies - \$20,000 <p>Governments: (in-kind)</p> <ul style="list-style-type: none"> • Office accommodation - \$12,000 • Counterpart staff - \$6,000 • Other - \$6,000

COST ESTIMATES AND FINANCING PLAN
(\$)

Item	Total Cost
A. Asian Development Bank Financing^a	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants	60,000.0
ii. National Consultants	120,000.0
b. International and Local Travel	51,000.0
c. Reports and Communications	16,000.0
2. Equipment	15,000.0
3. Training, Seminars, and Conferences	
a. International workshops	60,000.0
b. Local trainings, workshops, and local expert inputs	16,000.0
4. Surveys	40,000.0
5. Miscellaneous Administration and Support Costs	2,000.0
6. Contingencies	20,000.0
Subtotal (A)	400,000.0
B. Government Financing^b	
1. Office Accommodation and Local Transport	12,000.0
2. Remuneration and Per Diem of Counterpart Staff	6,000.0
3. Others	6,000.0
Subtotal (B)	24,000.0
Total	424,000.0

^a Financed by the Asian Development Bank's technical assistance funding program.

^b Bangladesh, Bhutan, India, and Nepal.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

1. The regional technical assistance (RETA) will require services from international and national consultants with specializations and work assignments as described below.

A. International Consultant (4 person-months)

2. The international consultant will have an educational background in environmental management and expertise and practical experience in hazardous waste management.

3. The international consultant will be responsible for the following:

- (i) Assist in identifying waste treatment facilities in or near Bangkok for member countries to visit. Study tour participants will learn how to engage the private sector in managing hazardous wastes, including how to formulate terms of reference.
- (ii) Assist national consultants in designing a survey and methodology for hazardous waste inventory.
- (iii) Assist national consultants in developing technical guidelines for hazardous wastes, and formulating policy and mechanism for institutional arrangement for managing hazardous wastes, by taking into account good practices within and outside the region.
- (iv) Assist India's national consultant in reviewing existing regulations on waste management to ensure the inclusion of reuse and recycle principles.
- (v) Assist in developing training modules.
- (vi) Attend and actively participate in several local workshops to ensure that inputs on (ii), (iii), (iv), and (v) are incorporated.
- (vii) Organize the regional workshops.
- (viii) Prepare a final report that summarizes the activities of the four member countries.
- (ix) Assist the member countries to establish a regional network or forum for sharing knowledge on managing hazardous wastes.
- (x) Undertake other activities to assist in achieving the outputs and outcome of the RETA.

B. National Consultants (30 person-months)

1. Bhutan (6.5 person-months, intermittent basis)

4. Two national consultants will be recruited in Bhutan. The lead consultant will be a hazardous waste management specialist (4.5 person-months), who will be assisted by an environmental policy specialist (2 person-months). Both national consultants will work closely with the local implementing agency, National Environment Commission, which will assign counterpart staff for the RETA. The national consultants will have the following responsibilities:

- (i) Work closely with the international consultant to (a) design an approach and methodology to undertake the inventory of hazardous wastes; (b) draft policy, rules, and regulations; and (c) develop technical guidelines and a mechanism for institutional arrangement for managing hazardous wastes.
- (ii) Prepare an approach and methodology to undertake the inventory of hazardous wastes in Bhutan.
- (iii) Organize workshops to familiarize stakeholders with the purpose, methodology, and expected results of the hazardous waste inventory.

- (iv) Prepare draft policy and rules as well as proposed institutional arrangements for managing hazardous wastes in Bhutan.
- (v) Prepare three main reports: (a) inventory of hazardous wastes, (b) draft technical guidelines for handling hazardous wastes, and (c) draft proposed policy and rules as well as proposed institutional arrangements to manage hazardous wastes.
- (vi) Prepare a brief monthly progress report, an inception report, midterm report, and final report.

2. Nepal (7.5 person-months, intermittent basis)

5. Two national consultants will be recruited in Nepal. The lead consultant will be a hazardous waste management specialist (5.5 person-months). He or she will be assisted by an environmental policy specialist (2 person-months) who has a background in policy analysis and solid knowledge and experience in formulating environmental policy. Both national consultants will work closely with the head of the Environmental Division of the Ministry of Environment, Science, and Technology, who will assign counterpart staff. The national consultants will have the following responsibilities:

- (i) Assist the Environmental Division to update the inventory of hazardous wastes, as a basis to formulate the hazardous waste management regulation, by:
 - (a) reviewing the 2004 report on the inventory of hazardous wastes and other reports on the inventory of persistent organic pollutants (POPs);
 - (b) preparing an approach and design a survey for collecting primary data;
 - (c) assisting the Environmental Division in conducting workshops with the Chamber of Commerce and Industry, Industry Department, Health Department, and other relevant sectors to test the survey tools;
 - (d) undertaking the survey; and
 - (e) analyzing the results of the survey and making predictions about waste generation for the next 5 to 10 years (in terms of amount and types).
- (ii) Assist the Environmental Division to prepare a draft set of guidelines and rules on hazardous waste management that meets the requirements of the Basel Convention, Stockholm Convention, and Rotterdam Convention.
- (iii) Assist the Environmental Division in organizing workshops and seminars to gather inputs for (ii).
- (iv) Prepare two main reports: (a) report on the types and quantities of hazardous waste, and (b) draft rules for managing hazardous wastes.
- (v) Prepare brief monthly progress reports, an inception report, midterm report, and final report.

3. Bangladesh (8 person-months, intermittent basis)

6. Two national consultants will be recruited in Bangladesh. The lead consultant will be hazardous waste management specialist (6 person-months). He or she will be assisted by an environmental policy specialist (2 person-months), who has a background in policy analysis and solid knowledge and experience in formulating environmental policy. Both national consultants will work closely with the technical director, Department of Environment (DOE), Ministry Environment and Forest. The national consultants will have the following responsibilities:

- (i) Assist the DOE to update the inventory of hazardous wastes, as a basis to formulate the hazardous wastes management regulation, by:
 - (a) reviewing the present studies on hospital wastes and lead batteries, as well as POP;
 - (b) identifying key industries to be included in the survey;

- (c) preparing an approach and designing a survey for collecting primary data;
 - (d) assisting the DOE in conducting workshops with the Chamber of Commerce and Industry and other relevant sectors to test the survey tools;
 - (e) undertaking the survey; and
 - (f) analyzing the results of the survey and making predictions about waste generation for the next 5 to 10 years (in terms of amount and types).
- (ii) Assist the DOE to prepare a draft set of guidelines and rules on hazardous waste management that meet the requirements of the Basel Convention, Stockholm Convention, and Rotterdam Convention.
 - (iii) Assist the DOE in organizing workshops and seminars to gather inputs for (ii).
 - (iv) Prepare two main reports: (a) report on the types and quantities of hazardous wastes, and (b) draft rules for managing hazardous wastes.
 - (v) Prepare brief monthly progress reports, an inception report, midterm report, and final report.

4. India (8 person-months)

7. Two national consultants will be recruited in India. One consultant will have a background and extensive experience in hazardous waste management (5 person-months); the other (3 person-months) will have a background in public-private partnerships (PPP) and extensive experience in waste management. Both consultants will work closely with the counterpart staff in the Ministry of Environment and Forest (MOEF).

8. The hazardous waste management specialist will be responsible for the following:

- (i) Assist the MOEF to review all regulations and guidelines on hazardous waste to ensure that reuse, recycle, and recovery aspects are well addressed.
- (ii) Assist the MOEF to review all regulations and guidelines on hazardous wastes to ensure that the economic value for recycle, reuse, and recovery is the major criteria for identifying the valuable resources from various waste streams.
- (iii) Assist the MOEF to prepare training module for undertaking inventory of hazardous wastes.
- (iv) Undertake training of trainers by utilizing the proposed module.
- (v) Produce two main reports: (i) report on the result of reviewing regulation, and (ii) a set of training module for undertaking inventory of hazardous wastes.

9. The PPP consultant will be responsible for the following:

- (i) Prepare a brief overview of the legal business environment.
- (ii) Identify and assess the key impediment to private sector participation in managing hazardous wastes.
- (iii) Analyze the legal roots of potential private sector participation in the context of legal institution.
- (iv) Undertake intensive stakeholder consultation to verify the accuracy of the findings.
- (v) Prepare several scenarios for PPP investment for managing hazardous wastes (private sectors in term domestic and foreign investors' participations).
- (vi) Prepare a report on possible private sector participation on managing hazardous wastes, such as potential scenarios on business plan, and guidelines on private sector participation.

- (vii) Prepare brief monthly progress reports, an inception report, midterm report, and final report.