



REQUEST FOR CEO ENDORSEMENT

GEFSEC PROJECT ID: 1802
IA/ExA PROJECT ID: 2596
COUNTRIES: Argentina, India, Latvia, Lebanon, Philippines, Senegal, Tanzania, and Vietnam
PROJECT TITLE: Demonstrating and Promoting Best Techniques and Practices for Reducing Health-Care Waste to Avoid Environmental Releases of Dioxins and Mercury
GEF IA/ExA: UNDP
OTHER PROJECT EXECUTING AGENCY(IES): National Governments; WHO
DURATION: 4 years
GEF FOCAL AREA: Persistent Org. Pollutants; International Waters
GEF STRATEGIC OBJECTIVES:
 POPs ~ SP-3 Demonstrations of Technologies and Practices
 IW ~ SP-4: Reducing PTS and testing adaptive mgmt of waters with melting ice
GEF OPERATIONAL PROGRAM: OP 14; OP 10
COUNCIL APPROVAL DATE: August 2006
COUNCIL APPROVED AMOUNT*: \$10,326,455
CEO ENDORSEMENT AMOUNT*: \$10,326,455
EFFECTIVENESS/STARTING DATE: October 2007
EXPECTED MID-TERM EVALUATION DATE: October 2009
EXPECTED COMPLETION DATE: October 2011

FINANCING PLAN (\$)		
	PDF	Project*
GEF	A	25,000
	B	699,948
	C	
GEF Total	724,948	9,942,455 (POPs) 384,000 (IW)
Co-financing	(provide details in Section d): Co-financing)	
GEF IA/ExA		
Government	305,000	10,549,494
Others	600,555	2,421,000
Co-financing Total		12,970,494
Total	1,630,503	24,021,897
Financing for Associated Activities If Any: US \$1,430,000 (<i>refer to Associated Financing to be provided by WHO, pp. 186-188 of FSP</i>)		

FOR JOINT PARTNERSHIP**		
GEF PROJECT/COMPONENT (\$)		
(Agency Name)	(Share)	(Fee)
(Agency Name)	(Share)	(Fee)
(Agency Name)	(Share)	(Fee)

* For multi-focal area projects, indicate agreed split between focal area allocations

** Projects that are jointly implemented by more than one IA or ExA

Approved on behalf of the (*Enter accountable GEF Agency*). This proposal has been prepared in accordance with GEF policies and procedures and meets the standards of the GEF Project Review Criteria for CEO endorsement.

[signed copy submitted 17 April 2007]

Frank Pinto
 Executive Coordinator, UNDP-GEF

IA/ExA Coordinator
 Date: 17 April 2007

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1. **FINANCING** (for all the tables, expand or narrow table items as necessary)

a) **PROJECT COST**

Project Components/Outcomes	Co-financing (\$)	GEF (\$)	Total (\$)
1. Establish model facilities and programmes	2,030,536	1,919,911	3,950,447
2. Deploy and evaluate health-care waste treatment technologies	4,262,802	2,714,445	6,977,247
3. Develop, test, manufacture and deploy affordable, small-scale non-incineration technologies	398,156	987,232	1,385,388
4. Introduce mercury-free devices	615,500	384,000	999,500
5. Establish or enhance training programmes	2,276,486	1,515,544	3,792,030
6. Review relevant policies	282,000	300,688	582,688
7. Disseminate project results at national level	966,523	943,132	1,909,655
8. Global and regional project results dissemination	637,111	597,056	1,234,167
9. Project Management budget/cost*	1,501,380**	964,447	2,465,827
Total Uses of Funds/project costs	12,970,494	10,326,455	23,296,949

* This item is the aggregate cost of project management; breakdown of this aggregate amount is presented in Table b) below.

** Please refer to table a-1 immediately below for details of management-related co-financing.

Table a-1: Management-related Co-financing

Partner	Details	Amount (USD)	Notes
WHO	Headquarters, secretarial work	6,000	Please refer to FSP, Annex 6A
WHO	Relevant Regional Offices; secretarial work	42,000	
WHO	Relevant Regional Offices; workshops	63,000	Please refer to FSP, Annex 6A
WHO	Relevant Regional Offices; dissemination of tools	21,000	Please refer to FSP, Annex 6A
WHO	Logistical support; logistical support (meeting rooms, transport, etc.)	32,000	Please refer to FSP, Annex 6A
WHO	National activities; secretarial work	42,000	Please refer to FSP, Annex 6A
WHO	National activities; workshop	42,000	Please refer to FSP, Annex 6A
WHO	National activities; dissemination of tools	10,500	Please refer to FSP, Annex 6A
WHO	National activities; logistical support (meeting rooms, transport, etc.)	42,000	Please refer to FSP, Annex 6A
HCWH	Management support	200,000	Please refer to FSP, Annex 6B
HCWH	Networking and dissemination beyond project timeline	200,000	Please refer to FSP, Annex 6B
HCWH	Continuity	150,000	Please refer to FSP, Annex 6B
HCWH	Project-related activities post Project submission until the inception of the project's implementation phase	60,000	
UIC	Support to Global Expert Team	46,500	Please refer to FSP, Annex 6B
UIC	GEO Library, list serves, and other networking support	111,600	Please refer to FSP, Annex 6B
Toxics link	Management support	75,000	Please refer to relevant co-financing letter
Agenda	Coordination and management support of the Component 3	27,780	Please refer to relevant co-financing letter
Vietnamese Environmental protection Agency	Coordination and management support	45,000	Please refer to relevant co-financing letter
Other, Misc.	Management support and contribution including Project website and legal support	45,000	
National Government	US \$ 40,000USD support per country towards management and coordination activities (6 countries; Vietnam calculated separately above and Tanzania not included)	240,000	
Total		1,501,380	

b) **PROJECT MANAGEMENT BUDGET/COST¹**

Component	Estimated Staff weeks	GEF(\$)	Other Sources (\$)	Project Total (\$)
Locally recruited personnel*	2,393	475,947	42,000	517,947
Internationally recruited consultants*	635	405,500	192,500	598,000
Office facilities, equipment, vehicles and communications	-	83,000	60,000	143,000**
Travel ***				
Miscellaneous (partner, NGO and other government support)		-	1,206,880	1,206,880
Total		964,447	1,501,380****	2,465,827

* Local and international consultants in this table are those who are hired for functions related to the management of project. For those consultants who are hired to do a special task, they would be referred to as consultants providing technical assistance. For these consultants, please provide details of their services in c) below.

** US \$83,000 for office facilities, equipment, vehicles and communication includes: US \$48,000 towards office costs of the two full-time international staff for the duration of the Project, US \$10,000 for international communication for the duration of the Project (phone, fax, mailings, etc.) and US \$25,000 for national equipment for all 8 countries (computers, LCD projectors, etc.).

*** A breakdown of total project travel costs is indicated in Table b-1 below. Given the nature of the project, global management and provision of technical assistance/technology transfer assistance go together and as such, it is difficult to separate out pure global management travel costs.

**** Please refer to Table 1-a above for details of management-related non-GEF support.

Table b-1: Travel Budget - details (sections highlighted in italics indicate travel for global management purposes only).

Travel Budget in Detail		
Activity	Details	Cost in USD
Travel for the Technology Component	Assume six international person-trips during the Project's duration at US \$5,000 each (technology development expert assistance)	30,000
National Travel	US \$5,000/ country for national travel within each participating country over four year implementation period	40,000
International Missions	Travel cost calculated at average of US \$4,750/person-trip & assumes 50% of international trips are flown on economy flights. Assumes 10 person-trips to Tanzania (monitoring & management) and 12 person-trips to the 7 other countries (3 person-trips/year for provision of technical assistance and monitoring/management), totaling 94 person-trips over project duration.	446,500
Global Project Steering Committee (GPSC) Meetings	Two GPSC meetings @ US \$70,000/meeting. Assumes 14 person-trips/meeting at US \$5,000.	140,000
Global meetings and training of National Consultants	Two international training of trainers meetings for national consultants at US \$37,500 each. Each meeting will have 15 participants. All participants will travel on economy class assumed at US \$2,500/person. 15 person-trips at US \$2,500.	75,000
Global and Regional Dissemination	Assumes 6 person-trips for the duration of the Project under global and regional activities in order to promote project activities and results in related, relevant international fora. Assumes US \$5,000/trip.	30,000
Total		761,500

¹ For all consultants hired to manage project or provide technical assistance, please attach a description in terms of their staff weeks, roles and functions in the project, and their position titles in the organization, such as project officer, supervisor, assistants or secretaries.

c) CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Estimated Staff Weeks	GEF(\$)	Other Sources (\$)	Project Total (\$)
Personnel	-	-	-	-
Local consultants*	6,334	981,376	1,552,343	2,533,719
International consultants*	1,504	916,333	1,498,400	2,414,733
Total	7,838	1,897,709	3,050,743	4,948,452

NB. *Table c) is additional to Table b) above.*

d) CO-FINANCING

Name of Co-Financiers (source)	Classification	Type	At Concept (\$)	At Work Program (\$)	At CEO Endorsement (\$)
Ministry of Health and Environment (Argentina)	national gov	in kind	613,486	613,486	880,000
AAMMA (Argentina)	NGO	in kind	50,000	50,000	50,000
Wr2 (Global company for activities in Argentina)	private sector	in cash	Not indicated (20% of technology cost)	Not indicated (20% of technology cost)	Not indicated (20% of technology cost)
Ministry of Health and Environment (Argentina)	national gov	in kind	266,000	266,000	266,000
Ministry of Health and Environment (Argentina)	national gov	in kind	990,166	990,166	990,166
Toxics Link (India)	NGO	in kind	425,000	425,000	425,000
IGNOU (India)	Other (teaching Institute)	in kind	55,555	55,555	55,555
Environmental Protection Fund (Latvia)	national gov	in kind	357,000	357,000	335,911
BAO (Latvia)	private sector	in kind	300,000	300,000	300,000
Medical Waste Solutions Limited (Latvia)	Private sector	in cash	2,000,000	2,000,000	2,000,000
Ministry of Health (Latvia)	national gov	in kind	211,300	211,300	211,300
Arc en Ciel (AEC) (Lebanon)	NGO	in cash	709,500	709,500	1,260,132
Ministry of Environment (Lebanon)*	national gov	in kind	318,500	318,500	318,500
Department of Health (Philippines)	national gov	in kind	1,425,774	1,425,774	1,425,774
Department of Health (Senegal)**	national gov	in kind	810,000	810,000	810,000
University of Dar es Salaam (Tanzania)	Other (University)	in kind	114,946	114,946	114,946
AGENDA (Tanzania)	NGO	in kind	27,780	27,780	27,780
Technology Development and Transfer Centre (Tanzania)	Private sector	in kind	38,430	38,430	38,430
Vietnamese Environmental Protection Agency (VEPA) (Vietnam)**	national gov	in kind	45,000	45,000	45,000
Ministry of Health (Vietnam)	national gov	in kind	240,000	240,000	240,000
URENCO (Vietnam)	national gov	in cash	705,000	705,000	705,000
Viet Duc Hospital (Vietnam)	Private sector	in kind	30,000	30,000	30,000
Ninh Binh Cluster (Vietnam)	Private sector	in kind	20,000	20,000	20,000
Health Care Without Harm (Global)	NGO	in kind	1,315,000	1,315,000	1,315,000

University of Illinois at Chicago (Global)	Other (University)	in kind	465,000	465,000	465,000
World Health Organization Headquarters (Global)	Multi-lateral agency	in kind	536,000	536,000	536,000
Other (Misc.)	NGO & private sector	in kind	45,000	45,000	45,000
Other (maintaining momentum with national project partners, post-approval, during CEO Endorsement process)****	HCWH	in kind	0	0	60,000
Total Co-Financing			13,544,437	13,544,437	12,970,494

* The co-financing amount for the Lebanese Ministry of Environment is US \$318,500. This amount differs from "Table 15: Co-Financing Letters" of the Project Document.
 ** The co-financing letter from the Senegalese Ministry of Health does not indicate the co-financing amount from the Senegalese Project partners. Based on discussions with MOH and MOE in Senegal, this co-financing amount is estimated to be US \$810,000.

*** The co-financing letter from Vietnamese Environmental Protection Agency (VEPA) enumerates the *total* co-financing amount from all Vietnamese partners at US \$1,040,000. Of this amount, US \$45,000 is contributed by VEPA directly. The other co-financing amounts are enumerated in the table as well.

**** Provision of probono advisory services and information updates over 12 month period (August 2006 – August 2007) to allow national partners to continue planning and organizing for launch of project activities.

2. RESPONSE TO REVIEWS

a) COUNCIL

COUNCIL MEMBER COMMENTS RECEIVED AT TIME OF FULL SIZE PROJECT SUBMISSION and UNDP RESPONSES (JUNE and JULY 2006)

The following table summarizes all COUNCIL comments received prior to the August Council Meeting, as well as UNDP responses and changes incorporated into the project document, as presented to the August 2006 GEF Council Work Program.

UNITED STATES	
Comment	Response
#73: Global (\$10.33m), (Argentina, India, Lebanon, Philippines, Senegal, Vietnam, Latvia, Tanzania) UNDP Demonstrating and Promoting Best Techniques and Practices for Reducing Health-care Waste to Avoid Environmental Releases of Dioxins and Mercury.	Project appears to express preference for non-incineration technology. Should be best and cheapest technology to achieving purpose. Is this something that could be changed?
	The purpose of the Project is to demonstrate the effectiveness of non-burn health-care waste treatment technologies, waste management practices and other techniques to avoid environmental releases of dioxins and mercury in seven countries. Project activities will include (see Project Document Page 2), inter alia, "demonstrating viable and cost-effective alternatives to the processes and practices that lead to the release of POPs."
	To directly answer the important question raised by the United States, the approaches that this Project will demonstrate will be cheaper and better than approaches utilizing medical waste incineration assuming the following are taken into account:
	<ol style="list-style-type: none">1. The specific circumstances of the countries and the health care facilities where Project activities are planned to occur; and2. The understanding that in making cost comparisons, only waste incinerators that can reasonably be considered as meeting Stockholm Convention BAT requirements will be used as a basis for comparison.
	The Project addresses avoidance of dioxin releases in the context of implementing obligations under the Stockholm Convention on Persistent Organic Pollutants. It is a global demonstration Project whose design and GEF-eligibility are based primarily on the following Stockholm Convention Provisions:
	<ul style="list-style-type: none">• The Convention (Annex C) lists medical waste incinerators as what it terms a "Part II Source Category." Facilities in the category are considered to have the potential for comparatively high formation and release of dioxins.

• Article 5 paragraphs (d) and (e) instruct Parties to require Best Available Techniques for new medical waste incinerators, and to promote Best Available Techniques and Best Environmental Practices for all medical waste incinerators.

• Article 5 (c) encourages Parties to promote the development of substitute or modified processes to prevent the formation and release of dioxins.

• Annex C, Part V (A) addressing general guidance on Best Available Techniques and Best Environmental Practices, states that priority should be given to the consideration of approaches to prevent the formation and release of dioxins.

• Annex C, Part V (B) (b), addressing Best Available Techniques instructs Parties that when considering proposals to construct new facilities or significantly modify existing facilities using processes that release dioxins, priority consideration should be given to alternative processes, techniques or practices that have similar usefulness but which avoid the formation and release of dioxins.

• Annex C, Part V (A)(f) states that when considering proposals to construct new waste disposal facilities, Parties should give consideration to alternatives such as activities to minimize the generation of medical waste, including resource recovery, reuse, recycling, waste separation, and promoting products that generate less waste.

The non-combustion technologies this Project will demonstrate do not generate or release dioxins to the environment. They are alternatives that should receive priority consideration over incinerators insofar as they are cost-effective, available, safe, and provide similar usefulness.

The Project, however, does not focus on technology alone. Only about 25% of the total GEF resources used in this Project across seven countries will be for the purchase and deployment of technologies. This is less than what one might pay for a single, large-scale central incinerator in one country that might arguably be considered in compliance with Stockholm Convention BAT obligations. The Project puts heavy emphasis on establishing training and management systems whose outcomes will be: to minimize the total waste generated; to efficiently separate potentially infectious wastes from ordinary wastes; and to promote resource recovery, reuse, recycling, and products that generate less waste.

World experience (including experience in the United States) demonstrates that to build and operate a medical waste incinerator with strict controls on dioxin formation and release is costly; and to retrofit an old incinerator to satisfactory dioxin-release standards has generally been cost-prohibitive.

On page 11, the Project Document notes that, for example, in 1988, the number of medical waste incinerators in the United States was estimated at 6,200. By 2004, the number had dropped to 111. As of August 2006, the total number was 72 medical waste incinerators for the whole country. The number in the United States continues to fall, mainly because of cost considerations associated with operating a medical waste incinerator to standards that minimize dioxin formation and release. At the same time, the utilization of autoclaves and other non-combustion methods for treatment of medical waste has greatly increased, based largely on cost-considerations.

Most countries participating in the demonstration project have already made national decisions to move away from the incineration of medical waste for environmental and other reasons. These countries have decided to participate in this Project to help them effectively implement their national decision consistent with good health care practices and consistent with meeting their Stockholm Convention obligations.

Some participating countries are still considering the pursuit of several options. These countries are participating in the Project to get practical experience in the approaches the Project will demonstrate in order to help them better understand what approaches work best in their country consistent with Stockholm

Convention obligations.

Finally, it should be recognized that while the Project provides practical assistance to the participating countries, it was designed to be a global demonstration project. One important Project output will be to generate good data and information on the costs and effectiveness of the approaches the Project will demonstrate across countries of different regions and at different states of development. This will enable developing countries and GEF Implementing and Executing Agencies to base future decisions related to healthcare waste management on a better understanding of the costs and effectiveness of different approaches.

The data, information and experience that will be produced by this Project will be very important. Poorly-controlled incineration and open-burning of medical waste is a widespread practice in many developing countries; it has been actively promoted as necessary to prevent the spread of diseases. Many countries have identified this to be a significant national dioxin source in their Stockholm Convention dioxin inventories. Therefore, it is anticipated that the GEF will receive numerous requests for assistance from eligible countries to help reform current health care waste management practices to make them compliant with Stockholm Convention obligations. We expect the experience garnered by this Project to be very helpful in enabling us to respond to such requests in ways that are most practical and cost-effective, consistent with Stockholm Convention obligations and consistent also with the needs of patient care and infection control.

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Comments

67. Global (Argentina, India, Lebanon, Philippines, Senegal, Vietnam, Latvia, Tanzania): Demonstrating and Promoting Best Techniques and Practices for Reducing Health-care Waste to Avoid Environmental Releases of Dioxins and Mercury.

GEF Agency: UNDP

GEF Financing: US\$ 10,330,000

Duration: 4 years

The project is proposed by 8 Parties of the Stockholm Convention on POPs and is aiming at the development and the promotion of non- incineration equipments and materials in the case of health-care waste management. This approach is in line with article 5 (c) of the Stockholm Convention which gives priority to the promotion of the development and, where it deems appropriate, the requirement of the use of substitute or modified materials, products and processes to prevent the formation and release of the chemicals listed in its annex C. Medical waste incineration belongs to priority source categories identified in the Stockholm Convention (“part II” category).

The project will focus on the deployment and evaluation of appropriate commercially available technologies (except in the case of Tanzania where low-cost technologies will be targeted). Moreover the alternative techniques listed in the Annex 4 of the project document are very close to the BAT and BEP developed by the Expert Group on BAT/BEP under the Stockholm Convention. Argentina, Latvia and the Philippines are actual members of this Expert Group, which should result in an optimal consideration of the Expert Group work into this project.

The proposed methodology is a bottom-up approach which seems very relevant to fulfill the objectives. The first part of the project deals with the establishment of model facilities using BAT/BEP. Nominative hospitals or clinics (associated with alternative techniques) are already identified in each country, which is a very good starting point. On this concrete basis, capacity-building programs, national policies reviews/updates and results dissemination for awareness- raising

<p>will be achieved. This part of the project is very ambitious; however the proposed management arrangements should ensure an efficient progress of the work.</p> <p>The different baselines in each country are well described, as well as the risk of a “business as usual” scenario (i.e. growing trend toward the combustion of wastes in very bad conditions: open burning or poorly performing incinerators). In the case of a BAU scenario, releases of dioxins are expected to continue at an estimated 187 g / year. This should be confident estimations as at least half of the countries (Argentina, Vietnam, Lebanon, and the Philippines) were first users of the PCDD/Fs toolkit developed by UNEP. On the whole, countries proposing this project have a high level of awareness of PCDD/Fs issues at least at the institutional level. To give another example, Senegal is hosting COP3 of the Stockholm Convention.</p> <p>Favourable opinion.</p>
<p>Response</p> <p>No response necessary.</p>

<p>GERMANY</p>	
<p>Comment</p> <p>Comments received from the German Council member indicated support for the project without any need for further comment or clarification.</p>	<p>Response</p> <p>No response necessary.</p>

<p>SWITZERLAND</p>	
<p>Comment</p> <p>From our point of view, some of these indicators are until now too general to be appropriate for project monitoring. For instance, a 50% reduction of overall waste at those facilities that do not currently practice segregation does not necessarily minimize the amount of dioxin and mercury indicated in the project proposal. Specific indicators for these releases should be included and the real values measured with spot checks.</p>	<p>Response</p> <p>While actual measurements of dioxins would have been ideal, the Project team decided that using measurements of dioxin reductions as indicators was too expensive due to the high costs of dioxin sampling and testing. Measurements of mercury in random samples of waste bags pose a hazard due in part to the need to open infectious waste bags (either for vapor sampling or visual inspection) which could result in aerosolization of pathogens. For these reasons, indirect indicators are proposed. For example, measurements of waste reduction through segregation reflect the level of segregation in the facility, which in turn gives an indication of the extent that mercury is kept out of the waste stream leaving the facility. Or if mercury is eliminated in a facility, it should not show up in the waste stream. The Project will take into account the interconnection of outputs and the indicators will be cross referenced and evaluated as a whole. Thus, segregation is a first-level indicator, which will be evaluated in relation to training (e.g., specific knowledge indicators of workers) and material substitution (e.g., replacement of mercury-containing devices or PVC-containing substances through procurement).</p>
<p>Comment</p> <p>Furthermore, the installation of one alternative treatment technology in all countries as indicator does not prove its</p>	<p>Response</p> <p>Noted and incorporated into the project document. (see 1 below)</p>

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effective and efficient operation. This has to be considered with specific quantitative indicators.	
Comment	Response
Moreover, the indicator for training programs should be adjusted. The counting of participants in training courses is simple but an increase of the number of personnel trained on best practices in HCWM is no guarantee for the use of proper methods. Indicators targeting realized improvements in e.g. hospitals are more result-oriented and more appropriate to measure the outcome.	Noted and incorporated into the indicators for Outcome 1 in the project document. (see 2 below)
Comment	Response
Also, the indicators regarding policy improvement remain so far rather vague and are not quantitative. The initiation of a policy dialogue in a certain country is hard to measure. If national governments are involved it is likely that policy dialogue will result in revised or further developed policies that can be measured quantitatively.	Noted and incorporated into the indicators for Outcome 6 in the project document. (see 3 below)
Comment	Response
From the project description it is unclear why so far only dioxins and mercury are included in the minimization program. Other substances such as chemotherapeutic, pharmaceutical or radioactive medical waste, should also be considered if they have a significant environmental impact. This evaluation should be done in fact during a preliminary investigation. ... It is very welcome that not only POPs are considered, but that the program also focuses on mercury as a toxic substance. However, we suggest that all other problematic components of health-care medical waste should also undergo a preliminary evaluation to show their contribution to the overall environmental impact of health-care waste.	The section on Alternative Systems Approach specifically includes chemical and radiological wastes (paragraphs 1 and 4, and Figure 3), and mentions in particular pharmaceutical waste (paragraph 1) and chemotherapeutic waste (paragraphs 6 and 10). These other waste streams are considered in the initial baseline assessment and in the minimization activities of the Project. While reductions and better management of these other waste streams are an added benefit of the Project and will be tracked and documented, the reduction of dioxin and mercury releases is the central focus of this demonstration project and the basis for evaluation of its success.
Comment	Response
However, by using wet thermal treatment systems (e.g. steam autoclaves) instead of incineration methods for bio-hazardous waste (pathogenic agents) the detoxication of organic substances in pharmaceutical	Except for the treatment of chemotherapeutic waste in an alternative technology in Argentina, treatment and disposal of the small amounts of hazardous chemical waste from health care will depend on existing laws and available infrastructure for storage, treatment and disposal in each country. Laws and regulations dealing with hazardous chemical waste are generally separate from

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waste (expired drugs), chemotherapeutics, laboratory waste etc. is not guaranteed. Also, chemical treatment methods, as e.g. hydrolysis, can not handle all remaining categories. It would therefore be reasonable to combine both non-incineration and incineration methods for separated waste treatment. From that point of view, standardization of technologies for specific waste streams would be an asset.

Other options at the national level for the use of existing alternative incineration capacities in the countries involved are not yet mentioned. Cement kilns could handle some of the waste categories and eliminate a significant amount of hazardous organic compounds, even chlorine containing substances, if operated at an adequate temperature level.

... National or even local conditions in the countries will definitely influence the way how waste is finally treated and should be considered. Alternative technologies and their owners who could prove their environmentally sound operation, such as e.g. cement companies, should be considered.

Comment

The dissemination of the information gained during the project phase to other developing countries or countries in transition, this in a pursuit to reduce the global impact of the substances addressed, is not yet clearly addressed in the project, but should be specifically included in the program.

Comment

Against the background that the development, purchase and implementation of new and adjusted non-incineration technology are rather sophisticated, the allocation of only 37% of the total project budget (Table 12) to these activities seems to be underestimated.

medical waste laws and guidelines. Many developing countries do not as yet have the laws, infrastructure, and technologies in place to treat hazardous chemical wastes, such as expired drugs or spent laboratory solvents, in a manner consistent with the requirements under the Stockholm Convention. In countries where such systems exist, the Project will evaluate and utilize the existing technologies where appropriate. Where they do not exist, such approaches as “return to manufacturer,” safe long-term storage, immobilization, or encapsulation options will be considered.

Response

The dissemination of information from the Project to other developing countries and countries in transition is Outcome 8 and is described in Tables 6 and 7.

Response

Installation and equipment costs for alternative technologies were based on past price quotes. Except for the advanced steam systems and alkaline hydrolysis, the standard waste autoclaves are relatively inexpensive, have simple designs, and do not entail sophisticated installation, commissioning and operation. The budget and the co-financing can adequately fund these costs.

1 – Under Table 8, for #2, 3rd column, a footnote has been added that reads: “Fully operational means that (1) all infectious waste is treated in the treatment technology before leaving the facility, (2) infectious waste is rendered non-infectious as shown by four consecutive weekly tests following the standard protocol for microbial inactivation efficacy, and (3) the treatment technology is operating daily or at the normal duty cycle for at least three months.”

- 2 – Under Table 8, for #1, 3rd column, the first bullet point now reads: “Policies requiring best practices existing in all model facilities, including training requirements and measurable goals.”
- 3 – Under Table 8, for #6, 3rd column, the first bullet point now read: “All participating countries have initiated dialogue on national health-care waste management policies, as indicated by at least one meeting or conference involving key policy-makers and stakeholders”

NOTE: These changes can be found on pages 56-57 of Project Document.

b) GEF SECRETARIAT

GEF SECRETARIAT REVIEW ATN WORK PROGRAM ENTRY and UNDP RESPONSES PROVIDED

GEF SEC Review Comments	UNDP-GEF Responses to GEF SEC Review Comments
<p>1. COUNTRY OWNERSHIP: Endorsement I can't find the endorsement for Tanzania.</p>	<p>The endorsement from Tanzania was provided on April 26th, 2006.</p>
<p>2: PROGRAM AND POLICY CONFORMITY: Program Designation and Conformity Eligibility of the Hg component needs to be further elaborated.</p>	<p>The Project aims to demonstrate and promote replication of best environmental practices and techniques for health-care waste management and to reduce barriers to national implementation of these strategies. During project preparation it became clear that, an additional, low-cost benefit could be achieved by incorporating a mercury component into the project, thereby reducing releases of this substance in tandem with the dioxin reductions. This would be accomplished by reducing the quantity of broken mercury-containing devices improperly discarded or burned by health care institutions/providers, thereby contributing to the broader goal of minimizing the amount of health-care waste generated and limiting the amount of waste burned in medical waste incinerators.</p> <p>The concern raised by the GEF Sec regarding possible ineligibility is understood - mercury is not a POP. The project has been submitted under GEF Operational Program (OP) #14 on POPs, with linkages to OP #10 on International Waters to acknowledge the mercury component. The mercury elimination component of the proposed project represents US \$384,000 of the total project budget.</p> <p>UNDP has explored the possibility of funding the mercury component activities with co-financing generated for the project. Unfortunately, given the complex project structure, and its related complex financial structure, this option will not be feasible. A second possibility could be to secure bilateral co-financing to support the project's mercury component. UNDP has initiated contact with a possible bilateral donor. A concern with regard to this approach rests on the fact that bilateral co-financing agreements, should UNDP be successful in securing a commitment, can often take time to negotiate and may lead to delays in approval of a project.</p>
<p>The significance of Hg emissions seems smaller (1%?), which in fact justifies the</p>	<p>There is an urgent global need to strengthen the political will to reduce Hg emissions, as indicated by the fact that governments have made no binding commitments to date. The health sector has been shown to be</p>

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<p>emphasis on unintentionally produced POPs in this project, Hg reduction being almost a "side-benefit" with low additional cost.</p>	<p>receptive to campaigns towards Hg pollution prevention and is therefore a good starting point. As long as the health sector does not address its own Hg releases, efforts to obtain the support of the health community for broader national and global endeavors regarding mercury pollution would be undermined. On the other hand, engaging the health sector towards Hg elimination in health care would build technical expertise, create advocates that could bolster the political will of countries, and increase support for global Hg reduction activities. Thus, even though Hg emissions from health care are of smaller significance compared to other sources, the attendant benefits of engaging the health sector could be considerable.</p>																								
<p>However small, it would be good to have an estimate of the actual direct UPOPs/ Hg reduction expected from the detailed description of the type of management options and interventions that will be undertaken.</p>	<p>Estimated Reductions at Local Model Facilities, Clusters and Programs Due to Project Intervention</p> <table border="1" data-bbox="505 850 797 1327"> <thead> <tr> <th>Country</th> <th>g TEQ / yr</th> <th>kg Hg / yr</th> </tr> </thead> <tbody> <tr> <td>Argentina</td> <td>0.71</td> <td>2.7</td> </tr> <tr> <td>India</td> <td>32</td> <td>170</td> </tr> <tr> <td>Latvia</td> <td>0.21</td> <td>1.7</td> </tr> <tr> <td>Lebanon</td> <td>1.8</td> <td>2</td> </tr> <tr> <td>Philippines</td> <td>0.61</td> <td>1.3</td> </tr> <tr> <td>Senegal</td> <td>0.44</td> <td>0.95</td> </tr> <tr> <td>Vietnam</td> <td>2.8</td> <td>2.4</td> </tr> </tbody> </table>	Country	g TEQ / yr	kg Hg / yr	Argentina	0.71	2.7	India	32	170	Latvia	0.21	1.7	Lebanon	1.8	2	Philippines	0.61	1.3	Senegal	0.44	0.95	Vietnam	2.8	2.4
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<p>2: PROGRAM AND POLICY CONFORMITY: Monitoring and Evaluation</p>																									
<p>The section on "key indicators of success" should be strengthened. It would be desirable to include some sort of results table with a limited number of quantitative or semi-quantitative indicators and targets, including baseline data, to facilitate the later judgment as to whether or not the project is a success and why.</p>	<p>Please refer to Table 3.</p>																								
<p>The table for M&E work plan looks comprehensive but includes too many "responsible parties". To be meaningful, that column should only list the main "Party" responsible for the particular M or E activity, not all the people involved.</p>	<p>Please refer to the modified table: Table 1.</p>																								
<p>3. FINANCING: Financing Plan</p>																									
<p>Cost-effectiveness should be strengthened. As it is, we have a statement that this is a cost-</p>	<p>This information has been incorporated into section 4b of the Executive Summary.</p>																								

GEF SEC Review Comments

effective way to reduce releases of unintentionally produced POPs.

UNDP-GEF Responses to GEF SEC Review Comments

Cost-effectiveness calculations were conducted using annualized costs per annual reduction in UPOPs emissions. These calculations are based on generic simulations corresponding to 5,448 beds. These calculations are provided in order to inform the readers. During the Full Project implementation, actual cost computations will be documented.

Cost Effectiveness of Alternative Treatment Systems

Technology and Cost Comparison	Cost Effectiveness (in \$/g TEQ reduced)
A. Comparison of Technologies and Practices:	
High-Tech Incineration With Best Practices	3192
Alternative Treatment Technology With Best Practices	1300
B. Comparison of Technologies Only:	
High Tech Incinerator	2200
Alternative Treatment Technology	300

Notes: Calculations were based on waste from a cluster of health facilities corresponding to 5,448 beds. Annualized costs include direct costs (labor, utilities, maintenance, disposal, consumables, and other operating costs) and indirect costs (capital recovery, overhead, administrative and other fees). Part (A) above includes the costs of developing and maintaining model facilities employing best practices (e.g., segregation and waste minimization) and takes into account the reduction in the amounts of waste that need to be treated as a result of best practices. Section (B) compares only the annualized costs of imported technologies for the same amount of health-care waste to be treated. Costs of the alternative technology were based on an autoclave-shredder system. In countries where the alternative technology will be locally manufactured (e.g., Philippines and Tanzania), installed capital costs of alternative technologies would be lower and consequently, alternative treatment systems would be even more cost effective. In all cases, the baseline used for calculating UPOPs emission reduction was a cluster of health facilities corresponding to 5,448 beds wherein all health-care wastes (with no segregation) are burned in an uncontrolled incinerator with no pollution control, as is done in many developing countries.

5. RESPONSE TO REVIEWS: Other IAs and RDBs

WB comments are appropriately responded to. I can't find response to UNEP comments.

Please refer to Annex F3.

c) REVIEW BY EXPERT FROM STAP ROSTER (IF REQUIRED)

Reviewer: Ed Krisiunas, MT(ASCP), CIC, MPH
 President
 WNNW (Waste Not, Want Not) International
 PO Box 1164
 Burlington, Connecticut 06013

1. General Overview
<p>This proposal is the culmination of years of trial and error at addressing Health-care Waste Management issue and their impact on the environment. While the term culmination implies an end, it also conveys a sense of moving on to another phase. That is in fact what this proposal presents. The next steps and phases that need to be implemented are presented in very good detail and with extensive objective rationale. Additionally:</p> <p>a. A tremendous amount of groundwork has already been laid in the countries that will be participating. It is exciting to read of the progress made as well as the issue still at hand. Therefore, this project is well out of the starting blocks and the momentum needs to be continued.</p> <p>b. The proposal does a very good job of identifying and stratifying the issues. This is clear when reviewing the various Outcomes and Outputs. Especially important items include the implementation challenges and assumptions and risks. This perspective could only have been gained from actual field work. This perspective already allows the project participants to be thinking of methods to minimize risk, many of which are provided in the proposal.</p> <p>c. The proposal identifies importance of the replacing mercury containing devices with equally or better products that will improve patient care as well as reduce pollution to the environment. We know certain practices are engrained within the healthcare industry and objective scientific information needs to be provided for new devices to have buy-in from the end user.</p> <p>d. The inclusion of a technology development component, specifically in Tanzania is a very positive personal, professional, and national enhancing aspect to the proposal.</p> <p>Comments: No response necessary.</p>

2. Specific comments, observations and questions	
STAP Comments	Responses to STAP Comments and Corresponding Changes in the Document (in bold)
<p>a. Examples of successful programs in locations other than the United States and Western Europe</p> <p>Reference is made to comparable successful programs in the United States and Western Europe. While the issues and challenges can in fact be very similar in the locations as well as in the countries selected for this project, the one overriding difference is the level of income. The United States and countries of Western Europe are considered high income while the project deals with low to middle income countries. Can reference be made to other low to middle income countries with successful programs? This would provide better realistic examples and applications.</p>	<p>Four examples are provided here. In Durban, South Africa, groundWork (an NGO affiliated with Health Care Without Harm) has worked with rural and semi-rural hospital institutions for the past five years to address health-care waste management. groundWork assisted facilities in conducting needs assessments and identified several key facilities with whom to collaborate to create health-care waste management models to demonstrate for other institutions. At each model facility, groundWork obtained the support of top management, involved staff in the development of the model system, worked with a key employee to ensure change within the facility and monitor progress, and consulted with municipal officials. groundWork helped develop institutional policies, provided training, facilitated deployment of an on-site autoclave treatment unit, and made sure that health-care waste management received a sufficient budget annually.</p> <p>The New Delhi-based NGOs Srishti and ToxicsLink have been supporting health-care facilities regarding health-care waste management problems since 1996. The NGOs identified the leading administrator whose influence and authority could produce successful policy and systemic change. This key person also ensured the implementation of good practices and the resulting economic benefits to the hospital. The NGOs also worked with medical and nursing staff, encouraged a team effort, helped develop regular and tailored training programs for personnel, and worked with the Delhi Pollution Control</p>

2. Specific comments, observations and questions	
STAP Comments	Responses to STAP Comments and Corresponding Changes in the Document (in bold)
	<p>Committee and private vendors. A recycling program for scrap material was initiated. Today these hospitals have good established health-care waste management systems because of their ongoing commitment since the late 1990s.</p> <p>In the Philippines, a successful model for management of sharps waste from a mass immunization campaign was demonstrated in 2004. The Philippine Measles Elimination Campaign generated an estimated 19.5 million syringes nationwide collected in 162,000 safety boxes in a little over a month. The model system entailed development of a guidebook, micro-planning, training, storage and transport, treatment in autoclave or microwave technologies, and/or cement encapsulation or burial. The results were documented in 19 sites representing urban areas, urban poor communities, rural areas, remote villages, mountainous areas, indigenous communities, coastal towns and small islands. About 406,300 children were vaccinated in the 19 sites. A report on the collaboration of HCWH and the Philippine Department of Health, with the cooperation of WHO-Philippines, is found in: http://www.noharm.org/details.cfm?type=document&id=926</p> <p>In Uttaranchal in the Himalayas, the Himalayan Institute Hospital Trust (HIHT) has developed a successful model for sharps waste management in remote rural areas. Sharps waste is generated during immunizations and other health services provided to poor communities in remote mountainous areas in Garhwal, Kumaon and other villages. The waste is collected in reusable metal sharps containers. The containers are then brought to the main 750-bed hospital in Uttaranchal where they are treated in a locally manufactured autoclave. The treated waste is then shredded and the shredded parts are allowed to fall into a bin filled with water. The water separates the plastic pieces which float to the top while the metal pieces fall to the bottom. A scoop is used to recover the materials and the plastics are taken to a plastics fabrication plant in India for recycling, while the shredded metal pieces are buried. HCWH visited the site and obtained data on their system which will be used as a model in the Project.</p>
<p>b. National consultants / Oversight For the National Consultants, their efforts will be very imperative to the continued forward movement and success of this project. The selected individuals tasked with this job need to clearly understand their roles and responsibilities and be committed to this project for the term selected.</p>	<p>The National Consultants are indeed key to the success of the Project. The Terms of Reference will specify the duration of work and potential consultants' commitment to the Project will be evaluated as much as possible. It is possible that some of the national consultants will already be familiar with the Project through prior involvement during the PDF B phase. At the start of the Project, a meeting of National Consultants and the Global Expert Team is planned to ensure that the roles and responsibilities are clearly understood.</p>
<p>c. Incentives The use of "incentives" is mentioned several times throughout the document. However, these incentives are not described in any detail i.e. monetary award, job promotion, supplies etc. The types of incentives may vary based upon local conditions and social norms. It is recommended to include some examples of what the incentives will be.</p>	<p>The specific forms of incentives on the local and national levels will vary in each country and according to a specific level of intervention. Individual incentives will be very important in some countries. An example of this might be the designation of individuals as environmental champions and recognition by their peers. Recognition of environmental champions in an award ceremony, coverage in local media or institutional communication forums, annual designation of environmental champions and engraving their names in a plaque, letters of acknowledgment from upper management,</p>

2. Specific comments, observations and questions	
STAP Comments	Responses to STAP Comments and Corresponding Changes in the Document (in bold)
	<p>etc, are all techniques that might be applied as appropriate. Some facilities may choose to provide financial incentives in the form of bonuses or monetary awards. Obtaining a certificate after the successful completion of a training program could provide an incentive for individuals to gain a basic competence in health-care waste management. In some countries, the certificate may be linked to future promotions or higher salary levels. The website for this GEF Project could also be used to highlight individuals and describe their accomplishments as another specific incentive. For health-care institutions the specific acts leading to cost savings as a result of waste minimization and proper management and increased regulatory compliance will provide another type of incentive. Similarly, reductions in nosocomial infections and in occupational injuries due to proper waste management are added incentives for infection control and safety officers as well as health workers in general to participate. In regions where health-care tourism is emerging market definition as "environmentally friendly institutions" may prove to be important.</p> <p>In the process of forging relationships with "model" facilities and networks, many of these incentives have been discussed and built into the rationale for institutional participation in the program already.</p>
<p>d. Health-care waste – Diagram of specific categories The document provides several flow diagrams related to various issues i.e., Page 14, Figure 1. Problem Analysis Tree to Indicate Cause-Effect Relationships for Challenges Faced. There is extensive detail related to the subject matter in each of the diagrams. Would it be possible to include a diagram of the categories of Health Care Waste being discussed in this project? They are not very well defined and a simple diagram could be included.</p>	<p>A simple diagram (Figure 2) showing the general categories of health-care waste and providing examples within each category has been added to the section “Alternative Systems Approach” of the Project Document.</p>
<p>e. Competing projects This is more of a recommendation. Efforts should be taken by National Consultants to be aware of projects funded by other entities that could compete with the effort of this project. It seems unlikely given the existing infrastructure and efforts to date. However, there have been situations where international development banks from different countries fund a project that is similar in design and content to others already underway.</p>	<p>One of the tasks of National Consultants during the PDF B phase was to investigate other related projects including projects of multilateral lending institutions and development agencies, explore possible synergies and avoid duplication with the GEF Project (see Annex 4). This task will continue to be part of the job function of National Consultants during the full project implementation.</p>
<p>f. Comments of the World Bank and Response I concur with many of the comments and perspectives of the World Bank. There is a response on page 133 to a World Bank comment which discusses the approach to managing the "non-risk" wastes. The reply is still too broad in its attempt to specifically answer the question.</p>	<p>In general, with the possible exception of wastewater or sewer discharges, the Project will cover the universe of health-care waste at the facility level with regards to identification, minimization, containment, segregation, handling, on-site storage and transport. For non-risk wastes, the Project at the facility level will also cover recovery, reuse, recycling and disposal as appropriate. For infectious and pathological waste, the Project will include treatment and disposal. However, for chemotherapeutic waste, an alternative technology will be</p>

2. Specific comments, observations and questions	
STAP Comments	Responses to STAP Comments and Corresponding Changes in the Document (in bold)
<p>If the scope of the project intends to cover the universe of healthcare waste (identification, segregation, and disposal/treatment), then it needs to be clarified or stated as such. Or it needs to be stated that this is limited to certain aspects of healthcare waste (infectious, chemo and path waste) and mercury containing material as the alternative technologies mentioned are used primarily for infectious waste. Some additional clarification may be needed at the beginning of the proposal.</p> <p>The remaining responses, with the exception of the items mentioned in this review are very appropriate and address the concerns of the World Bank. The extensive groundwork clearly provides a better vision of the way forward.</p>	<p>tested and demonstrated only in Argentina. Except for chemotherapeutic waste in Argentina, treatment and disposal of the small amounts of hazardous chemical waste from health care will depend on existing laws and available infrastructure for storage, treatment and disposal. Facility-level training and national training programs will include information on the proper management of the universe of health-care waste.</p> <p>An explanation of health-care waste categories addressed by the Project has been added to section “Alternative Systems Approach” of the Project Document.</p>
<p>g. Financial resources</p> <p>A very important element of this project will be the availability of financial resources to sustain various components that need to be implemented. Not to lessen the importance of the support and buy-in of all stakeholders, the reality is a strong long-term financial resource will more likely carry this project forward towards fruition.</p>	<p>The overall budget, including co-financing, should provide sufficient financial resources to implement the various components for the duration of the full Project. The portion of GEF funding, however, will decrease during the second half of the Project as local and national stakeholders raise the funds necessary to sustain the work in the long term. In some cases, the funds will come from budget allocations by local or national governments as well as by health facilities, a commitment that will be reflected in the MOUs. In other cases, such as central treatment facilities operated by the private sector, the revenue stream from providing treatment services will sustain the activities. Where appropriate, recommended policies and regulations will incorporate provisions to generate financial resources to sustain various Project components such as the national training program. During the last year of the Project, assistance will be provided to seek other sources of funds to ensure sustainability.</p>
<p>h. Health Care Waste Management – A genuine priority</p> <p>The most challenging aspect of this project will be for each country to view Health-care Waste Management as a genuine priority. In these low and middle income countries issue of waste management will compete with a host of issues including but not limited to the delivery of healthcare services with limited supplies, limited or unskilled healthcare professionals, social and political issues.</p> <p>It would be prudent to further contemplate and include within this proposal what methods could be employed to in fact attract the attention and interest of the waste producer (healthcare provider) and the public instead of pursuing them for their attention. This is the genuine challenge.</p>	<p>The challenge of other competing needs and priorities is well recognized and acknowledged. The participation of local and national stakeholders in Project planning and implementation will help preserve the interest and commitment of health providers. Working with representatives of the ministries of health and environment in the National Project Steering Committee will help maintain a high priority for health-care waste management which could be reflected in national policies, plans and budget allocations. Training and national dissemination, such as a national conference, are components of the Project which would lead to greater awareness and interest among health workers and policy-makers. As a result of their involvement in the National Working Group, environmental and health NGOs could influence public discourse and policy towards keeping a high priority on health-care waste management. During the early part of the Project, public education through announcements and media releases, where appropriate, could also attract public attention to the problems related to health-care waste. It is important to note that a good health-care waste management system could help address some competing needs, such as infection control, health worker safety and environmental protection.</p>

3. Conclusions

With the above items incorporated and/or considered in the proposal, this project for reducing Health-care waste to avoid environmental release of dioxins and mercury is well constructed and thought through. I strongly support allowing it to move forward.

Comments: No response necessary.

3. JUSTIFICATION FOR MAJOR CHANGES IN THE PROJECT, IF ANY²

N/A

4. REQUIRED ATTACHMENTS

a) Project Appraisal Document

Attached.

b) Confirmed letters of commitments from co-financiers (with English translations)

Originals, and translations, attached.

c) Agency Notification Template on Major Project Amendment and provide details of the amendment, if applicable.

N/A

² Provide justifications for any major amendments in the project, including an increase of project amount exceeding 5% from the amount approved by the Council. Justification for such amendments and the project document will be circulated to the Council for a four-week review period. For procedures to the approval for major amendments, refer to the Council paper: [Project Cycle Update: Clarification of Policies and Procedures for Project Amendment and Drops/Cancellations. GEF/C.24/Inf.5](#)