

Kingdom of Cambodia
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CAMBODIA

THE SECOND HEALTH SECTOR SUPPORT PROGRAM

THIRD ADDITIONAL FINANCING

FIELD ENVIRONMENTAL ASSESSMENT REPORT

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TABLE OF CONTENTS

I.	INTRODUCTION	4
1.1	Background.....	4
1.2	Environmental Policies	4
1.3	Background of Environmental Assessment (the previous Assessments).....	4
II.	OBJECTIVES OF THE ENVIRONMENTAL ASSESSMENT	4
2.1	Objectives	4
2.2	Scope of Works.....	4
III.	METHOD OF ASSESSMENT	4
3.1	Methods.....	4
3.2	Selection of Locations for Visit	5
IV.	FINDINGS.....	7
V.	LESSON LEARNED FOR REVISION OF DRAFT ENVIRONMENTAL MANGEMENT PLAN .	8
ANNEXES.....		9
ASSESSMENT METHOD (Guiding questions)		9
SUMMARY OF FIELD NOTES BY LOCATION.....		11
PHOTOS BY LOCATION		15

I. INTRODUCTION

1.1 Background

1.2 Environmental Policies

1.3 Background of Environmental Assessment (the previous Assessments)

II. OBJECTIVES OF THE ENVIRONMENTAL ASSESSMENT

2.1 Objectives

The assessment was commissioned to individual consultant to review existing revised EMP (dated December 2014), consult with relevant stakeholders at national and local level (including local authority, contractors, staff and management of HCs, communities and beneficiaries). Two key areas that were focused are: compliance to EMP, particularly during construction, and 2) Health Care Waste Management that is being carried out in every Provincial Hospitals and Health Care Centers.

2.2 Scope of Works

The Environmental Assessment consultant is required to carry out the followings:

- a) Consult with the Bank task team and the Ministry of Health for selecting sites to be visited to:
 - ✓ Assess compliance to mitigation measures related to construction of health facilities in the draft Environmental Management Plan (EMP) which include construction dust and noise control, waste management, site management, safety controls, provision of clean water and sanitation facilities, unexploded ordinance removal, and asbestos containing material demolition management.
 - ✓ Assess health care waste management, including waste segregation and collection, transportation and storage, and how different kinds of waste have been disposed of.
 - ✓ Evaluation on existing incinerator in current RHs and HCs of during site visit to Kampong Cham, Kampong Thom and Siem Reap
- b) Update the draft EMP incorporating findings from the above assessments and update mitigation measures as appropriate.
- c) Participate in the project appraisal mission as requested by the Bank Task team.

III. METHOD OF ASSESSMENT

3.1 Methods

Because HSSP-2 has been implemented with satisfactory results of safeguard implementation, and there is no new safeguard policies are triggered, this assessment paid attention on:

- ✓ Desk works: Relevant environmental policies and documents of HSSP-2 were reviewed, most importantly Project Appraisal Document (PAD) and draft EMP to understand policy or implementation gaps.
- ✓ Field visit: Discussion was made with Bank and MoH's officials to identify facilities to be visited. The visit aims primarily at observing and cross-checking the compliance to EMP (during

construction) including the management of site, construction waste, sanitation, use of asbestos, management of dust and noise, etc. that were spelled out in the EMP, and the degree of management of health care waste in health care facilities.

- ✓ Consultation: Discussion was made with Bank officials in charge to understand the nature of HSSP2, and progress of project. Meeting with MoH (consecution engineers and field consultants) was also useful to understand the situation of implementation of EMP, and mapping the locations for the field visit. The mission met also with staff and management of health care centers and provincial hospital and contractors to learn how EMP is implemented, and what are the gaps to be improved. Visit also looked at how medical waste and waste eater were collected, stored, treated and disposed off and evaluation of existing incinerators.
- ✓ Lessons learned from HSSP-2 Implementation: It is important that HSSP-2 learns from the results of safeguard implementation and compliance. The results of this assessment will be an integral part of the revision of EMP, and key recommendations are made in section below.

3.2 Selection of Locations for Visit

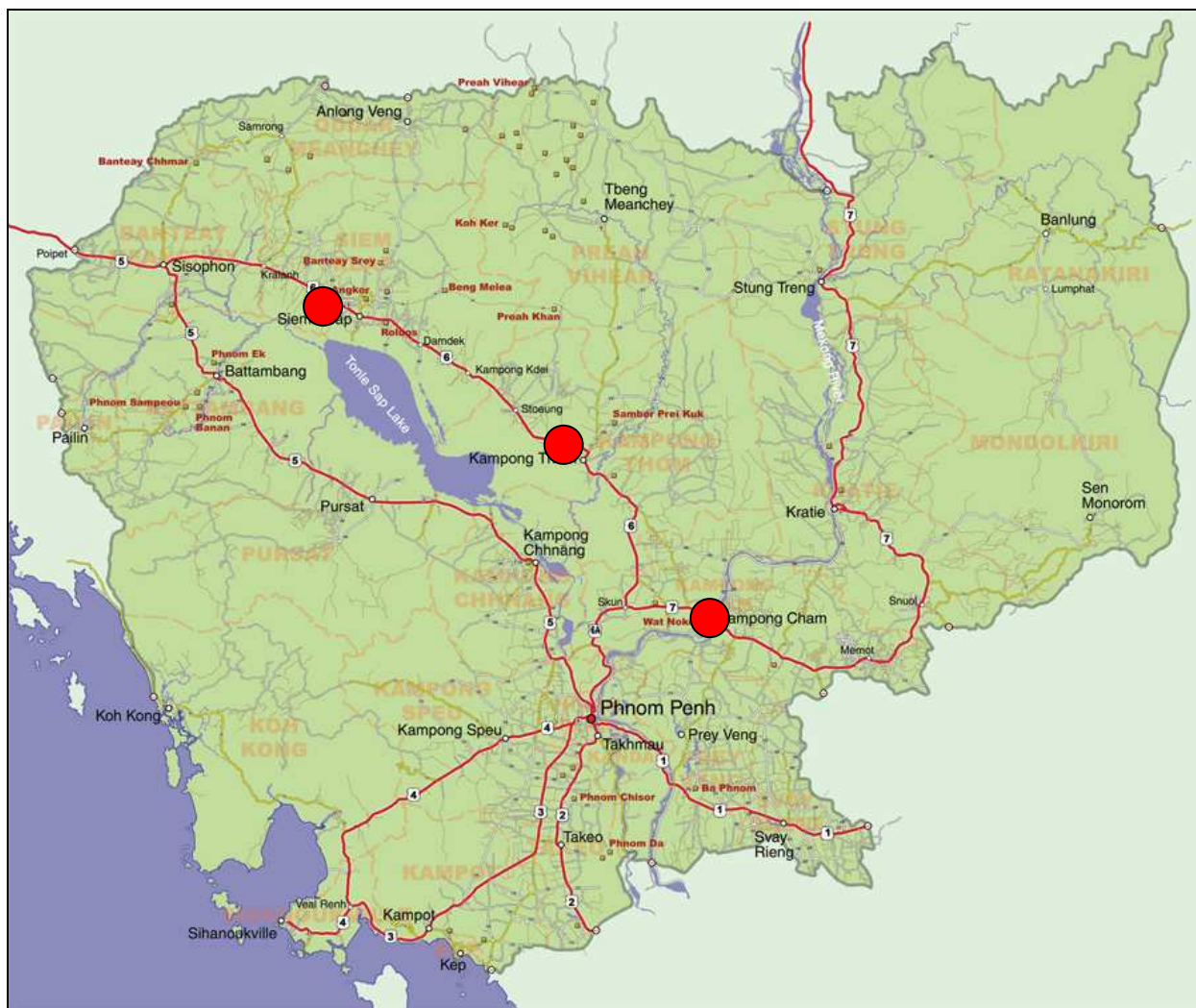
Of all, 19 locations (including referral Hospitals/HR, and Health Centers/HC) were selected from the list of HSSP-2 financed projects. Provinces located around Tonle Sap Lake were selected for the visit, and the selection purpose was also influenced by the time limitation. See table below.

Table 1. List of locations Visited

No.	Province	Health Center or Provincial Hospital	Types of Facility
1	Kampong Cham	Srey SanthorRH	New maternity building- substantial completion
2		Ph'av HC	New ADR under construction
3		Chhoeung Prey RH	New incinerator donated by French NGO
4		Prey Chhor RH	Evaluation of existing incinerator
5		Kampong Cham RH	Evaluation of existing incinerator
6		PrekKak HC	New ADR under construction
7		MesarChhrey HC	New ADR under construction
8		ChamkarLeur RH	Evaluation on existing incinerator
9	Kampong Thom	Baray RH	Evaluation on existing incinerator
10		Tipo HC	New ADR under construction
11		Kampong Thom RH	Evaluation on existing incinerator
12		Sambo HC	New ADR under construction
13		Stoung RH	New Maternity building- substantial completion

14	Siem Reap	Ponley HC	New ADR under construction
15		PonroKroamHC	New ADR completion
16		KorkThlokKroam HC	New ADR completion
17		SotrNikumRH	Evaluation on existing incinerator
18		Kralanh RH	Evaluation on existing incinerator
19		Seim Reap	Evaluation on existing incinerator
20		Angkor Thom HC	New ADR completion

Map 1. Locations of Field Visit



Source: Field visit, 2015

IV. FINDINGS

The assessment finds the following issues to be considered for the revision of EMP:

1. Compliance (Construction phase)

- a. **Knowledge on EMP:** Contractors/site engineers were not aware of EMP, and stated that it was not attached in the bidding documents. They have never seen, or were informed to comply with the environment tools.
- b. **Compliance:** Less interest was paid to compliance of EMP, most importantly site safety, and construction waste management (storage and dispose off). Waste is burned or leave scattered in the construction premise.
- c. **Monitoring and reporting:** None of contractors have included situation of EMP implementation in the progress report. No monitoring on environmental compliance was made by project owner (MoH) according to key informants met in the field.

2. Health Care Waste Management:

- a. **Guidelines and compliance:** the guidelines were well disseminated to all RHs and HCs, and persons in charge acknowledged the training given by Department of Health of MoH. Commitment has been made to implement the guidelines in many RHs and HCs visited.
- b. **Waste management facilities:** The commitment to implement the guidelines hindered by some factors including limit budget to purchase waste bins (for waste separation) and limit of space and structure for proper storage of medical waste such as sharp objects. Some HCs or RHs stored used syringes directly on the ground, which highly likely pollute underground water. In many cases, the constructed incinerators are old and malfunctioned. Smokes and ash from burning medical waste disturbed the surrounding residences. Some RHs and HCs burn the all hospital waste on the ground near damage incinerator.
- c. **Human factor:** RHs and HCs see the need to capacitate families of patients who visited or accompanied their relatives while received treatment on good practice for waste management. Some RHs and HCs need to have a good number of well trained health care workers to keep the building and premise clean. This has not yet been the case. Issues lies with the ability to pay for salary of cleaner on the one hand, and limit workers who are interested to work in the hospital on the other hand.

3. **Incinerator and Location:** Two type of incinerator for burning sharp object such as syringes and other infected wastes: a. normal incinerator build with brick and manufacture medical waste incinerator made of steel. From all visited sites incinerator build from brick is easy to use and hospital staff is familiar with this type while the other type is difficult to use (according to field interview) and most of them are now malfunction. In addition a difficulty that RHs and HCs face is expensive cost of repair for instance broken chimney. Moreover, the locations of some incinerator (in Prey Chhor RH, MesarChrey HC, ChamkarLeu RH, SothNikumRH, and Kralanh RH) are very close to

village/houses that cause difficulty for hospital to burn all medical waste since there are always complains from local people when burning medical waste.

V. LESSON LEARNED FOR REVISION OF DRAFT ENVIRONMENTAL MANGEMENT PLAN(EMP)

Some good lessons learned are elaborated below:

- ✓ Institutional matters: MoH/HSSP2 must play important role to ensure that EMP is complied with by contractors and their site engineers. To do so, MoH must assign focal person/unit to be responsible for environmental and social related issues. Their capacity should be built through short term training and on-the-job-training (that is site monitoring and supervision, and reporting). Contractors must be very well informed about EMP and implement it. The consultants of MoH/HSSP2 must ensure that contractor report (in the construction progress report) the implementation of EMP at least once every three months.
- ✓ The MoH progress report must incorporate environmental condition of all sub-projects. The Bank shall then provide necessary technical support and advice to clients and contractors such as short term-training program on EMP and Bank environmental policies and requirement, as well reporting and monitoring techniques. For a minimum requirement, at least at the beginning of the construction works contractors, health care workers, HC/HR people should be oriented about project EMP. Director and staff of RHs and HCs should be seriously involved in the monitoring of the construction, including implementation of EMP.
- ✓ Good practice for construction: EMP is often lengthy. Thus not many people like to read. Because the construction activities will not generate significant negative environmental impacts, and EMP is generic in nature, a summary of key good practices (issues and mitigation measures) would be helpful to many contractors and site engineers. It may be printed on A3 paper and post it in the construction premise in such a way it is visible to relevant stakeholders (workers, health care people, etc.). MoEYS has developed simple and very short version of key practices and explained to stakeholders before commencement of construction works. This may be well applied. But further fine-tuning works may be required for health sector.
- ✓ Where (project sites) serious issues were evidenced or reported, bank/HSSP2 should consider withholding the payment or imposes warning to contractors until issues are properly taken care of.
- ✓ Medical waste management should be strengthened and all medical waste should be burned in the functioning incinerator and avoid burning on the ground.
- ✓ It is necessary to repair existing incinerator or build a new one in different location to avoid impact to local village/houses.

ANNEXES

ASSESSMENT METHOD (Guiding questions)

Key issues	Stakeholders
I. Compliance	
1.1 During construction (try to visit HCs and PHs that are under construction, if any)	
Have you ever seen EMP? in English or Khmer?	Contractors/MoH engineers
Have you been informed that EMP is attached with your bidding documents? explain.	Contractors/MoH engineers
Have you ever read or tried to understand them? do you understand them? What are the obstacles/difficulties in implementing the tools?	Contractors/MoH engineers
Have any agencies monitored the implementation of EMP? MoH? MoE? Consultants of HSSP-2? How often they (agencies) come and monitor the implementation of EMP?	Contractors/MoH engineers
Have you ever reported EMP implementation results in the construction/operation progress report?	Contractors/MoH engineers
Is there any negative impacts were reported or evidenced so far?	Contractors/MoH engineers
How do you manage your construction waste, dust, water for workers, accommodation, latrines, safety, etc. (need your own observation, Sophy)	Contractors/MoH engineers
Are you satisfied with the result of implementation of EMP? If possible rate 1-5?	Contractors/MoH engineers
How EMP/Safeguard documents are being/were used?	
Has it translated and updated?	WB/MoH/Contractors/HCs and PHs

How important t is EMP for your project? Please rate 1-5.	WB/MoH
II. Health Care Waste Management (During operation of HCs and/or PHs)	
Where is your incinerator? when it was built, and how is the condition now (functioning?)?	HCs/PHs and patients and families where applicable
How medical waste is managed? by whom?	HCs/PHs and patients and families where applicable
Where is dumping stations (within hospital and city stations)?	HCs/PHs and patients and families where applicable
You may be aware of Health Care Waste Management Guidelines? has it fully been disseminated to all HCs and PHs? How about your place?	HCs/PHs and patients and families where applicable
What are the difficulties implementing the guidelines?	HCs/PHs and patients and families where applicable
Is there any requirement for regular monitoring, reporting and budgeting for the implementation?	HCs/PHs and patients and families where applicable
How waste water is managed (from surgery rooms, etc.)?	HCs/PHs and patients and families where applicable
How many health care workers are working? are they sufficient? have they ever been trained on how to handle medical waste?	HCs/PHs and patients and families where applicable
Do you have enough tools (waste bins, gloves, masks, and other tools to protect from infectious diseases...) for implementing the guidelines? If not, what do you need?	HCs/PHs and patients and families where applicable
Any kinds of pesticide used and how they are managed?	HCs, and provincial hospitals.
Any other advises/opinions? example, making EMP shorter or implementable to contractors, communities and engineers?	Contractors/MoH engineers
III. Institutional arrangement and actual practices	
Who are involved in safeguard preparation, implementation (reporting and monitoring)?	WB/MoH
What is the role of community in monitoring EMP?	WB/MoH/Community
What is the actual situation of implementation of EMP?	WB/MoH and consultants if any
Who/what office is incharge of safeguard issues within the project/MoH?	WB/MoH and consultants if any
Have staff ever been trained? when, what, how?	WB/MoH
Have you ever received any complaints so far, say poor	WB/MoH

construction waste management; dust; land issues; ...?	
IV. Revising/Updating EMP for Additional Financing (AF3)	
Need for understanding the gaps of EMP implementation including institutional capacity and arrangement; reporting; monitoring; budgeting; etc.	WB/MoH
What is the PDO (project development objectives of AF)	WB
Geographical coverage?	WB
Scale of construction works?	WB
Do we need budget for future training on safeguards (for contractors, MoH staff, etc.)?	WB/MoH

SUMMARY OF FIELD NOTES BY LOCATION

No.	Province	Health Center or Provincial Hospital	Types of Facility
1	Kampong Cham	SreySanthor	<p>Referral Hospital: Contractor knows about EMP, but did not well understand. EMP should be very important for construction monitoring, but appeared less necessary for many local contractors.</p> <p>Incinerator is old (1997), and malfunctioned. Needs new incinerator.</p> <p>Guidelines for WM are in place, but lack of budget to implement it. RH has to seek budget from its own resources for cleaning and maintaining the facilities and premises. Staff have never received training on EMP monitoring, or safeguards.</p>
2		Ph'av	<p>Health Center: Consultants of MoH informed contractor about EMP, but contractor has not seen the document and did not understand it. No one has received training on EMP.</p> <p>An incinerator was built in 1999-2000, but located too close to the HC. People affected by smell and smoke. HC requested for new facility at new location. Currently, only staff is cleaning the HC.</p> <p>Septic tank has not been properly sealed. It may impact the use of underground water.</p>

3		Chhoeung Prey	<p>Referral Hospital: Two red and blue waste bins are allocated in the RH. The guidelines are difficult to implement, but RH is doing the best. Not enough health care workers to clean the premise and waste.</p> <p>The incinerator chimney is low, so people (police station and surrounding residents) feel the smell and smoke. They requested RH to stop burning waste or develop proper design to improve the incinerator. No training on EMP, but infection control. So this is a good contribution to waste management. Kitchen waste is collected by municipality-the waste collection contractor.</p> <p>Training should also be considered given to patients, not only staff. RH needs budget for implementing the guidelines including protective equipment for health care workers.</p>
4		Prey Chhor	<p>The original incinerator has been abandoned. Requested for a new facility with proper design to prevent from smoking and impacts to surrounding residents.</p> <p>Communities often made complaints to the center.</p>
5		Kampong Cham	<p>Referral Hospital: MRC donated an incinerator, but it is no longer functioning. No spare part for maintenance. Not enough space for keeping/storing ash. The hospital provided training to staff and monitors the implementation. Monitoring report is prepared on monthly basis.</p> <p>Some difficulties in implementing the guidelines: not well understood, not enough budget for buying bags, and waste separation is complicated. Everyone have to clean hands, and hospital needs budget for soap and cleaning stuff. By 2015 to achieve 75-78% of implementation of guidelines, but now reaches only 25%. This RH is very old, and needs urgently be repaired.</p>
6		PrekKak	<p>Health Center: no protection to construction workers. EMP seems to be not implemented. Hazardous waste is sent to incinerator outside the premise (the current one is not functioning), and municipal and construction waste is burned. No monitoring on EMP. Guidelines are aware of, but has not been fully implemented. Now using well water sitting next to septic tank.</p>
7		MesarChhrey	<p>Limit space for HC, affected by temporary smokes, dust and noise from construction. Not clear of the change of location of</p>

			<p>the HC was agreed by the donor (Bank?). It locates only 1m away from the Right of Way (ROW).</p> <p>Contractor has not seen or understood EMP. Not in the contract. The very old incinerator is still in function. Sharp objects were temporarily stored in an unused well, but burned openly once in a while. No incinerator for such objects.</p> <p>Burning affected surround residents. Because typed water supply is expensive, people use well water. Guidelines were disseminated but not fully implemented. HC has to spend for cleaning services, and not easy to find workers in the area.</p>
8		ChamkarLeu	<p>Incinerator is broken 3 years ago. Waste is collected and dumped at dumping site nearby (likely that medical waste included?). Medical waste is openly burned in the premise, and communities complained because of smoke and smell. No proper maintenance is made to the facilities. Ash is disposed off in the vicinity of center. Some waste bins are available for waste separation and storage.</p> <p>Budget is limit for implementing the guidelines, and center requested for a new incinerator. Hospital uses water from wells.</p>
9	Kampong Thom	Tipo	<p>HC. Construction waste management is poorly managed. Both contractor and consultant are not aware EMP. waste is disposed off in front of the construction site.</p>
10		Baray	<p>RH. Currently, the number of patients increases. An incinerator is being used to burn sharp objects as well as other medical waste. Burned sharp objects were then buried. Hospital tries to implement guidelines. Some waste bins are put available, and separation of waste is monitored.</p>
11		Kampong Thom	<p>RH. Incinerator was built in 1990, and still in function. Provincial administrative office complaints about smell during burning. Hospital tries to implement the guidelines. not only staff, but patients and families need to be well trained how to store waste. Sharp objects are burned every day at lunch time. With the guidelines, the waste management in the hospital has been improved.</p>
12		Sambo	<p>The area is prone to flood. So, it has to raise the level of HC. Poorly manage of construction materials. Staff of HC were not aware if contractors implement EMP. Staff were aware of the guidelines but expressed difficulties to implement it due to limit of budget. though, some waste bins are made available.</p>
13		Stoung	<p>Contractor and staff have never heard of EMP. Construction waste is disposed off near by the construction site, and burned.</p>

			<p>Contractor stated that they have not seen EMP in the sntruction specification.</p> <p>Hospital staff and management was made aware of guidelines, and committed to implement it. There are 20 workers are working on cleaning the premise, including medical waste. Medical waste is burned every 4-5 days depending on the volume.</p>
14	Siem Reap	Ponley	Contractors and staff of HC are not aware of EMP. Hazardous waste are separated from municipal waste every 3-4 days. Harzadoues waste is brought to OD, which locates 15 km way from the center. Staff are not happy with the selection of location for HC.
15		PongroKroam	The construction of center has completed in 2013. Staff were made aware of the guidelines. An incinerator is being used. Waste segregation is also being implemented.
16		KorkThlokKroam	The facility has been built in 2013. Staff are aware of the guidelines, and waste separation is made. An incinerator is working normally during the visit. Sharp objects were either burned in the center or brought to other place.
17		SotrNikum	The staffadn management are awre of the guidelines, and committed to implement it. however, the limit of facilities is the constraint for the implementation. Although medical waste are separated, and burned but the current incinerator could accommodate an increasing waste. So, some remaing waste will have to be burned openly or in a damaged structure. people complaint about smell and smoke coming from the incinerator. there is need to train health care workers on sanitation and waste separation.
18		Kralanh	Incinerator is placed next to the surgery room, possibly affected to patients. Waste separation is made. However, it finds difficult to store sharp and dangerous waste due to space limit. Incinerator is functioning normally. There are 13 health care workers are working in the center.
19		Seim Reap	Two incinerator are available (using gasoline, and a small one using fire wood). Both facilities are functioning very well, but need proper care. The center has allocated space for waste storage and burning. Implementation of guidelines experienced some difficulties: lack of safety box, and hygiene works. waste separation and storage has been increasingly aware. Municipal waste collection is not regular, resulting that waste is overloaded in the center. Students who attend the internship

		and families of patients need training.
20	Angkor Kraom	The facility has been built last year (2014). The provincial department of health monitor the center on regular basis. because the center has large land area, it needs more health care workers. No major issues were found.

PHOTOS BY LOCATION
KAMPONG CHAM



Meeting with RH staff – SreySanthor RH



New Marternity Building - SreySanthor RH



Good and Functional Incinerator – Chheung Prey RH



Incinerator that Affect the nearby village – Prey Chhor RH



Un-protected from Danger of Construction Steel –
PrekKak HC

Medical Waste that Dump into the Un-use Well–
MesarChrey HC

KAMPONG THOMG-



Kitchen waste that need to be proper managed – Baray RH



Burning medical waste and general waste on the ground – Baray RH



Sand stock of new ADR blocking access to HC - Tipo



Malfunction incinerator - Kampong Thom RH



Concrete mixing machine that block passage to Toilet – Sambo HC



Construction waste – Stoung RH

SIEM REAP-



Medical waste and general waste burn near village/house
– SothNikum RH



Storing and malfunction of incinerator – SothNikum RH



Good waste segregation – Siem Reap RH



Good instruction of waste separation – Siem Reap RH



Location of burning area is very close to operation room
– Kralanh RH



Good medical waste management – PongroKrom HC