

Ministry of Urban Development  
of the Republic of Armenia

**Kotayk Solid Waste  
Management Project -  
Environmental and Social  
Due Diligence**

Environmental and Social Action Plan

Draft for public comments

November 2011



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Prepared LLA  
Checked CASK  
Approved CASK

## Purpose of this document

For an investment project funded by the EBRD the loan agreement typically include an Environmental and Social Action Plan (ESAP) prepared as a program of mitigation and performance improvement measures and actions that address the identified environmental and social issues. The ESAP should be implemented by the client at relevant stages of the project in order to achieve and maintain compliance with the EBRD Performance Requirements (PRs).

The ESAP may consist of a combination of operational policies, procedures, management systems, practices and capital investments. Where technically and financially feasible, the measures and actions to address identified impacts and risks should favour the avoidance and prevention of impacts over minimisation, mitigation or compensation of impacts.

The ESAP should include the following action points:

- Actions required to contain/remediate past environmental damage and assessment of costs and/or further investigations.
- Actions required to achieve compliance with the PRs, including national environmental, health, safety and labour regulations and standards EU environmental standards, and EU/IFC OHS standards/guidelines.
- Actions to improve EHS management and performance in accordance with the PRs and good international industry practice.
- Actions that might be required to mitigate any adverse socio-economic impacts of the project and to increase the benefits of the Project for the local population.

Implementation responsibilities as well as a schedule and an estimated budget for each of the identified mitigations shall be included in the ESAP.

Draft ESAP for the proposed Kotayk Solid Waste Management Project prepared by the Consultant within Environmental and Social Due Diligence (ESDD) assignment is included in the table overleaf.

## Environmental and Social Action Plan for Kotayk Solid Waste Management Project

ACM - asbestos-containing materials, CDM - Clean Development Mechanism; Company - company operating regional sanitary landfill; CCMP- Contractors/Suppliers Compliance Monitoring Program, EMP - Environmental Monitoring Program; ESIA - Environmental and Social Impact Assessment; E&S - Environmental and Social; Landfill - regional sanitary landfill for municipal solid waste of Kotayk Region and Sevan municipality; LOM - Landfill Operation Manual; LCAM - Landfill Closure and Aftercare Manual; PIU - Project Implementation Unit; PPE - Personal Protective Equipment; PR - Performance Requirement; SEE - State Environmental Expertise of Armenia; SMP - Social Monitoring Program

PR	Subject	Potential environmental and social impacts/issues	Mitigation / management actions	Implementation schedule	Budget/ resources	Responsibility	Success verification means <sup>1</sup>
1	ENVIRONMENTAL AND SOCIAL APPRAISAL AND MANAGEMENT	1.1.Organisational capacity and commitment	1.1.1. Establish and maintain Environmental, Social and Health & Safety Management System (ESHS). Employ EHS management staff with the Company. Develop and Implement ESHS Training program.	Establish during landfill construction, maintain throughout the Project duration	Own resources, Consultant remuneration	8 cities, PIU, consultant	ESHS management system established, staff employed and trained, manuals available
			1.1.2. Develop and follow Landfill Operation Manual (LOM), Landfill Closure and Aftercare Manual (LCAM) including Environmental Monitoring Program (EMP)	Develop LOM prior to start of landfill operation and LCAM prior to closure of landfill, implement throughout the Project duration and during after-care period	Develop: Consultant remuneration Implement: own resources of Company	Develop: consultant Implement: Company, monitoring contractor(s)	LOM and LCAM available, monitoring system in place, monitoring contractor(s) engaged
			1.1.3. Develop and implement Social Monitoring Program (SMP)	Develop within 6 months after signing the Project agreement, implement throughout the Project	As per consultancy contract	PIU, Consultant	SMP available, monitoring consultant engaged
			1.1.4. Prepare and implement a coordinated action plan for closure of existing dumpsites in Abovyan, Byuregavan, Charentsavan, Sevan, and Yeghvard cities and for prevention of waste dumping in Kotayk	Plan completed before commissioning of landfill, implementation within 9	Budget allocations of cities, Consultant remuneration	8 cities, PIU, consultant	Dumpsite Closure Plan in place

<sup>1</sup> In addition to annual reports prepared by the PIU in a format agreed with the EBRD

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1			Region and Sevan municipality	months after the landfill commissioning	neration		Quarterly progress reports
		1.2.Environmental and social appraisal	1.2.1. Prepare national EIA of the Project including activities listed in Chapter 17 of the ESIA. Obtain approval of EIA according to the Armenian procedure.	Prior to start of construction	PIU management time, consultant remuneration, SEE fee	PIU, consultant	Approval for EIA obtained from SEE
			1.2.2. Carry out baseline environmental monitoring as part of EMP and baseline social monitoring as part of SMP	Prior to start of landfill construction	PIU, consultant remuneration	PIU, consultant	Baseline reports of EMP and SMP
1		1.3. Affordability of tariffs	1.3.1. Ensure the tariff structure for waste collection from households at the level not more than 1% of average income per capita. Address the issue of waste generation by tourists and other users. Monitor the income and tariffs as part of the Social Monitoring Program and, if there are problems, bring to the attention of EBRD and other relevant authorities.	Develop income and tariff monitoring procedure as part of SMP prior to start of landfill operation, implement during landfill operation	PIU management time, consultant remuneration	PIU, consultant	Reports on SMP
1		1.5.Managing the contractors and suppliers	1.5.1. Include in tendering documents the requirement for contractors to develop procedures/method statements for the project to manage the EHSS issues including but not limited to the below, adopting international best practice in line with the Armenian legislation and the EBRD PRs: <ul style="list-style-type: none"> <li>▪ EHSS procedures</li> <li>▪ Labour, working and worker accommodation conditions</li> <li>▪ Community safety and security</li> <li>▪ Supply chain sustainability</li> <li>▪ Grievance mechanism</li> </ul>	During preparation of tender specifications/dossiers	PIU management time, consultant remuneration	PIU, consultant	Tender dossiers
			1.5.2. Develop and implement a Contractors/Suppliers Compliance Monitoring Program (CCMP)	Prepare during tendering, adjust and implement on an on-going basis during	PIU management time, consultant remuneration	PIU, consultant	CCMP

PR	Subject	Potential environmental and social impacts/issues	Mitigation / management actions	Implementation schedule	Budget/ resources	Responsibility	Success verification means <sup>1</sup>
				all contractor works			
2	EMPLOYMENT AND LABOUR	2.1.HR policy	2.1.1. Develop and implement HR policy and procedures for the Company in accordance with EBRD PR2.	Develop before commissioning of the landfill and implement as the Project routine	Company management time, consultant remuneration	Company, consultant	HR policy and procedures
			2.1.2 Develop and implement procedures for recruitment and career development in a manner consistent with the principle of equal opportunities (for men and women).	Development: Prior to start of construction; Implementation: During construction and operation	Company management time, consultant remuneration	Company, consultant	Staffing schedule of the Company
2	OCCUPATIONAL HEALTH AND SAFETY	2.2. PPE provision	2.2.1. Carry out and keep updated OHS risk assessment of work places prepared by authorised consultant	Carry out during Year 1 of landfill operation, update every five years (or as per Armenian regulation)	Management time, consultant remuneration	Company, consultant	Reports on OHS risk assessment available from authorised consultant
			2.2.2. Provide PPE for the staff of Company and include in tender documents the requirement for all contractors including the municipal waste collection companies in 8 cities to provide adequate PPE according to OHS assessment of workplaces and the local regulations; provide training and incentives for use of PPE, arrange for PPE cleaning, maintenance and timely replacement.	Include in tender requirements. Implement throughout landfill construction and operation	Own resources of Company and contractors	PIU, Company, contractors	Tender dossiers, annual PPE provision plans and implementation reports available
2	GRIEVANCE MECHANISM FOR WORKERS	2.3.Grievance mechanism for employees	2.3.1. Establish and maintain the grievance mechanism for the Company employees allowing them to submit their formal or informal grievances and issues of concern and to have them properly registered, followed up and addressed.	Establish within 6 months after signing Implement throughout the Project duration	Management time, consultant remuneration	Company, consultant	Records of grievances and response as part of annual reports
2	EMERGENCY PREPAREDNE	2.4. Accident hazards (fire, earthquake, extreme	2.4.1. Develop and implement Emergency Preparedness and Response Plan (EPRP) as part of LOM and LCAM	Develop before Project starts operation and implement with reviews	Management time, annual budget alloca-	Company, consultant	EPRP in place,

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	SS AND RESPONSE	weather conditions, etc.)	2.4.2. Regularly update the EPRP	on annual basis	tions, consultant remuneration		
3	AIR	3.1.Dust and emissions from vehicles, machinery, welding equipment	3.1.1. Prepare and implement emission control procedure as part of LOM	Prepare prior to start of landfill construction, implement as the Project routine	Own resources	Company, consultant	LOM
			3.1.2. Include emission control requirements in tender dossiers and monitoring procedure for contractors	Include during tendering and maintain during all contractor works	Management time, consultant remuneration	PIU, consultant	Tender dossiers, CCMP
		3.2. Emissions from waste during operation	3.2.1. Install and operate landfill daily cover, gas collection system and landfill gas monitoring system according to LOM	During landfill operation	Part of landfill operation costs	Company, contractor	LOM, EMP
			3.2.2. Carry out a feasibility study for landfill gas utilisation	After 3 years of landfill operation	As per consultancy contract	Company, consultant	Feasibility study report
		3.3 Emissions from waste after closure	3.3.1. Install and operate landfill final cover, gas collection and utilisation (as per special feasibility study) system, as well as landfill gas monitoring system according to LCAM	Develop procedure prior to start of landfill operation, implement during landfill closure and after-care	Part of landfill closure and after-care costs	Company, contractor	LCAM, EMP
3	WATER	3.4. Water resources management	3.4.1. Develop and implement (and include in tendering documents the requirement for all contractors to implement) water saving/efficiency measures.	Development: Prior to start of construction; Implementation: During construction and operation	Part of operation costs	PIU, Company, contractors	Tender dossiers, CCMP, LOM
		3.5. Surface runoff, water bodies, groundwater	3.5.1. Establish and maintain surface runoff management system and leachate management system, vehicle wash facility, sanitation system as part of LOM.	Establish prior to start of landfill operation, maintain during landfill operation	Management time, contracts	Company, contractor	LOM

PR	Subject	Potential environmental and social impacts/issues	Mitigation / management actions	Implementation schedule	Budget/ resources	Responsibility	Success verification means <sup>1</sup>
			3.5.2. Prepare and implement surface water monitoring, groundwater monitoring and leachate monitoring programs as part of LOM and LCAM based on the monitoring requirements given under Section 17 of the ESIA,  Where non-compliances are identified, implement corrective actions.	Prepare before landfill construction, implement during landfill construction, operation and after closure until stabilisation of the waste	Management time, consultant remuneration, contracts	Company, consultant, contractor	LOM; LCAM, EMP, reports on corrective actions
3	SOIL	3.6. Contamination of soil by spills of fuel, waste, chemicals, leachate	3.6.1. As part of EHSS establish and implement a procedure (and include in tendering documents the requirement for all contractors to establish procedures) to ensure safe storage and handling of fuel, oil, waste and chemicals on paved surfaces equipped with secondary containment and drip trays, maintain relevant labelling, avoid washing of vehicles on the construction sites, carry out daily check of machinery for leaking oil, ensure management of leachate according to LOM	Include in tendering, establish and maintain construction works and during landfill operation	To include in contracts and annual operation costs for landfill	Company, contractors	Tender dossiers, LOM, CCMP
		3.7. Soil spills, washouts, re-sedimentation, compaction, deformations, slope stability	3.7.1. Cover excavated soil during transportation by road vehicles. Store excavated soil at dedicated areas, ensure slope stability, arrange clean surface runoff. Include the same requirements in the tender documents for contractors.	During tendering and implementation of any activities involving excavation of soil or any movement of soil	To include in contracts	Company, Contractor	Contracts, CCMP
3	MINERAL RESOURCES	3.8. Supply chain	3.8.1. Use construction materials supplied only from authorised borrow sites, wherever applicable use locally available construction materials. Include the same requirements in the tender documents for contractors.	During tendering and implementation of construction works, to be verified during construction supervision	Consultant remuneration, management time, construction contract	Consultant, PIU, Company, contractor	Tender dossiers, CCMP, LOM
		3.9. Saving of mineral resources	3.9.1. Implement soil saving measures for waste covering according to LOM. Prevent loss of mineral materials during transportation, handling and storage. Include the same requirements in the tender documents for contractors.	Development: Prior to start of construction; Implementation: During construction and operation	To include in contract and operation costs	Contractor, Company	Tender dossiers, CCMP, LOM
3	WASTE	3.10. Disposal of hazardous waste	3.10.1. Develop and implement a procedure for segregation of hazardous waste during collection as per contracts and storage as part of	Development: Prior to start of construction;	Part of operational costs	Company, contractors	CCMP, LOM



PR	Subject	Potential environmental and social impacts/issues	Mitigation / management actions	Implementation schedule	Budget/ resources	Responsibility	Success verification means <sup>1</sup>
3			LOM.	Implementation: During construction and operation			
			3.10. 2. Ensure that all hazardous waste from temporary storage facility located at the landfill is sent to an appropriate final disposal facility	During landfill operation and closure	Management time, as per contract	Company, contractor	LCAM, contracts with authorised companies
	ENERGY EFFICIENCY	3.12. Energy efficiency and reducing energy cost	3.12.1. Include energy efficiency requirements in tender specifications for procurement of all equipment (engines, pumps, lamps, heating, insulation), vehicles and machinery, as well as equipment for landfill gas collection and utilisation (as per special feasibility study)	During preparation of tender specifications/dossiers	To be included in the cost of tendered equipment	Consultant, Company	Tender dossiers, LOM, annual reports
4	VISUAL IMPACTS	4.1. Visual impact of landfill	4.1.1. Consider and minimise visual impact on viewers from main road and adjacent areas (paint structures to fit the surrounding environment, bury any cables or lines on the site, use non-reflective paints and coatings, ensure minimum lighting required for safety and security, maintain a minimum area with open waste, plant vegetation, keep equipment and site tidy, establish final cover similar to surrounding landscape features)	During landfill construction, operation and after-care	Management time, consultant remuneration, as per contracts	PIU, consultant, contractor	Tender dossiers, LOM, LCAM, annual reports
		4.2. Visual impact of waste collection operations	4.2.1. Ensure pleasant colours and maintenance of waste containers, collection points (including bring banks), collection trucks and operator uniforms/PPE	During procurement and operation of waste collection equipment	Annual budget allocations	Company, contractor	Procurement plan, contracts, annual reports
4	TRAFFIC	4.3. Traffic disturbance	4.3.1. Include in tendering documents the requirement for contractors to prepare, communicate in advance and implement traffic management plan with appropriate traffic re-direction measures that are easily seen and easy to follow.	During preparation of tender specifications/dossiers and prior to commencement of the construction activities	To include in contracts	Contractor	Contracts, supervision reports
4	COMMUNITY IMPACTS	4.4. Changes in waste collection, transportation and disposal routines	4.4.1. Taking into consideration the views of the communities and customers, men and women, plan and provide timely information and gradual roll-out of changes to achieve improvement of services starting from pilot areas and adjusted according to outcome of customer sur-	During landfill construction	Management time, consultant remuneration	PIU, consultant, Company, municipalities	Roll-out plan, SMP, evaluation reports

PR	Subject	Potential environmental and social impacts/issues	Mitigation / management actions	Implementation schedule	Budget/ resources	Responsibility	Success verification means <sup>1</sup>
			veys carried out for evaluation of experience as part of SMP				
		4.5. Noise, vibration and light nuisance during construction and operation	4.5.2. Notify the affected communities, adequately in advance, about the expected nuisance. Limit work activities to daylight working hours or as agreed with the local public and authorities. Reduce project traffic routing through community areas wherever possible. Limit vehicle speed to avoid nuisance within communities.	Prior to start of construction activities and as the Project routine during establishment and operation of the new regional waste management system	To include in contracts	Company, contractor	Tender dossiers, CCMP
		4.6. Odour during construction and operation	4.6.2. Use containers with lids for collection of waste. Plan waste collection services for shortest possible storage of waste at collection points. Use closed vehicles during waste collection and transportation with container for leachate. Regularly empty the containers at dedicated leachate collection points. Washout vehicles and their substructure for reduce on road vehicle odour.	During tenders for procurement of waste collection equipment and services and during operation phase of the Project as part of the Project routine	To include in contracts and operation costs	Company, municipal waste collection contractors	Tender dossiers, CCMP
		4.7. Community health, safety and security	4.7.1. Develop and implement procedures for protecting public health and safety (e.g. traffic management plan, fencing, drivers training program, pedestrian access and trespassing plan, road design, slope stability, clean-up of spills, well visible signage, awareness-raising)	To include in tender requirements, prepare prior to start of landfill construction activities, implement during construction and operation	Management time, contracts	Company, contractors	Tender dossiers, CCMP
			4.7.2. Restrict construction activities on the landfill site after closure	During landfill aftercare	Management time	PIU	Long-term land use plan approved by local authorities
5	ECONOMIC DISPLACEMENT	5.1. Economic displacement of people due to temporary restriction of access to productive assets	5.1.1. Develop and implement a compensation framework defining the process and principles, under which a compensation is to be awarded in the event of economic displacement in accordance with the principles of PR5 and gain approval of EBRD.	Develop prior to start of construction activities, implement during construction works in case they restrict access to productive assets	PIU management time, consultant remuneration, compensation budget allocation	PIU, consultant	Compensation procedure available, SMP

PR	Subject	Potential environmental and social impacts/issues	Mitigation / management actions	Implementation schedule	Budget/ resources	Responsibility	Success verification means <sup>1</sup>
5			5.1.2 In cases where there is a loss of livelihood provide compensation or alternative source of income in accordance with the framework developed.	Before and during construction	PIU management time, consultant remuneration, compensation budget allocation	PIU, consultant	Compensation procedure available, SMP
			5.1.3. Plan and carry out all the works as to avoid/minimise the displacements.	Plan prior to start of construction, implement during construction and operation	Management time	PIU, contractors	Tender dossiers, CCMP, SMP
			5.1.4. Inform potentially affected people in advance of any access restrictions.	Prior to any construction works start restricting access to productive assets	Management time	PIU, contractors	SMP, CCMP
			5.2. Loss of income of informal waste pickers	5.2.1. Identify alternative livelihood options for the waste pickers in accordance with the principles of livelihood framework prepared as above and in consultation with the affected people.	Prior to start of construction activities	Management time, consultant remuneration	PIU, consultant
	LAND ACQUISITION	5.3. Temporary or permanent land acquisition	5.3.1. Prepare a framework containing the principles under which compensation is to be awarded in the event of land acquisition (of privately owned land) displacement in accordance with the principles of PR5 and gain approval of EBRD.	Prior to start of construction activities	Management time, consultant remuneration	PIU, consultant	Compensation procedure available, SMP
			5.3.2. In cases where there is land acquisition, provide compensation in accordance with the Framework developed.	In case any access through third party land or property is required	Management time, compensation budget	PIU	SMP
			5.3.3. Select optimal location of facilities, access routes and construction sites to minimise temporary or permanent use of land	Prior to start of construction activities	To include in contracts	PIU, contractor	CCMP
			5.3.4. Ensure clear delineation and fencing of landfill area	During construction and afterwards	To include in construction costs	Contractor	CCMP

PR	Subject	Potential environmental and social impacts/issues	Mitigation / management actions	Implementation schedule	Budget/ resources	Responsibility	Success verification means <sup>1</sup>
6	BIODIVERSITY AND NATURAL ENVIRONMENT	6.1. Impacts on nature protected areas or any natural environment	6.1.1. Plan and carry out all the works as to minimise/avoid disturbance to any natural habitats. Include the same requirement in the tendering documents for contractors.	Plan prior to start of construction activities. Include in tendering requirements. Implement during construction, operation and aftercare	As per contracts	PIU, contractors	Tender dossiers, CCMP
			6.1.2. Plan and implement bird and vermin monitoring and control measures as part of LOM	Planning: Prior to start of landfill operation; Implementation: during operation	As per consultancy contract	Company, consultant	LOM, EMP
8	CULTURAL HERITAGE	8.1. Awareness of cultural heritage protection rules and Chance Find Procedure	8.1.1. Develop and maintain (and require contractors to have established) a Chance Find Procedure	Develop prior to excavation activities, maintain during soil excavation	To include in tender requirements	PIU, consultant	CCMP
			8.1.2. Enhance awareness of Company employees and contractors of cultural heritage protection rules and procedures, including a Chance Find Procedure. Ensure that foremen and others are trained in following it	As part of the training program before construction and throughout Project duration	To include in training program, consultant remuneration	PIU, Company	CCMP, LOM
10	DISCLOSURE AND STAKEHOLDER ENGAGEMENT	10.1. Meaningful consultation	10.1.1. Update and implement SEP for the Project	On annual basis throughout the Project duration	Management time, consultant remuneration	PIU, Company, consultant	SEP
		10.2. Public outreach program as part of SEP	10.2.1 Prepare and implement a program for raising public awareness and changing behaviour on the following issues: new regional waste management system, waste tariffs for households and other customers, protection of water bodies and irrigation systems from waste dumping and littering, collection of recyclable waste fractions, management of construction and demolition waste, chemicals, asbestos containing materials.	Prepare prior to start of operation, implement during landfill operation	Management time, consultant remuneration	PIU, consultant	SEP including public outreach program in place, SMP
		10.3. Coordination with	10.3.1. Collect and review updated information on tourism infrastruc-	Prior to start of construc-	Management	PIU, Company,	SMP

PR	Subject	Potential environmental and social impacts/issues	Mitigation / management actions	Implementation schedule	Budget/ resources	Responsibility	Success verification means <sup>1</sup>
		other projects	ture development projects and/or other development projects, consider cooperation (coordination, co-financing) opportunities	tion activities and as part of SMP during construction and operation of landfill	time, consultant remuneration	consultant	
10	GRIEVANCE MECHANISM	10.4. Grievance mechanism for customers and other stakeholders	10.3.1. Further develop the grievance mechanism for customers and other stakeholders. Provide the response in writing within 10 working days. Keep records, carry out internal reviews and report to the EBRD and the public on the grievances and response, protecting the privacy of individuals.	Throughout the Project duration, as per SEP	Management time, consultant remuneration	PIU, Company, consultant	SEP, SMP
		10.5. Grievance mechanism for contractors	10.4.1. Require availability of a grievance mechanism in the contractor organisations	Include requirements during tendering, ensure compliance during contractor works, as per SEP	Management time and as per contract	PIU, contractor	Tender dossiers, SEP, CCMP

