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6 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

6.1 GENERAL

This section summarises the organizational requirements and monitoring plans required to ensure that the necessary measures are taken to avoid potentially adverse effects of the Project on environmental, health and safety (H&S) and social aspects. These specific steps are outlined in an Environmental and Social Management Plan (ESMP). Some of these measures have already been specified by GC at the present state of project planning. Since an ESMP continues to evolve in scope and depth with subsequent stages of the project preparation and implementation (e.g. construction, operation, tendering, decommissioning), the ESMP of this ESIA provides a first outline.

Overall responsibility for the ESMP lies with Garadagh Cement for all project phases, i.e. project design, construction, operation, and decommissioning.

Responsibility for measures related to the construction phase will be with the selected EPC Contractor. His activities, however, will be supervised by staff of the project owner GC to ensure that adverse effects during the construction phase will be avoided.

Detailed stand-alone sub-plans may be developed to specify ESMP issues in its further progress (e.g. detailed Monitoring Plan, Emergency Response Plan, Community Development Plan). In case of responsibility delegation, sub-plans shall be developed by contracted companies according to their area of responsibility in order to show how they implement GC's ESMP requirements.

Annual monitoring reports will be compiled and made available to the relevant authorities and the financial lenders, as requested and appropriate. The reports shall cover the status of EHS related aspects like permits, status of compliance with obligations arising from such licences or permits, exceedings of regulatory environmental standards with root cause analysis, corrective measures.

6.1.1 Construction

GC will nominate a responsible person (Supervisor) for supervision of the environmentally relevant activities of the EPC contractor.

The Supervisor will be responsible to carry out inspections during construction and to supervise the EPC contractor's activities to ensure that the

EHS requirements are met during construction (e.g. based on the EPC contractor's ESMP). Observations will be reported regularly (e.g. weekly) to the GC and EPC contractor management team where corrective measures will be discussed, if necessary.

In addition, GC will perform inspections on environmental approval of installations and supervise measurements to verify whether the environmentally relevant specifications given by the manufacturers are met (e.g. air pollutant emissions, noise emissions, dry process efficiency, energy efficiency).

The EPC contractor will be obliged to provide all necessary skilled and trained EHS staff to ensure that all activities are carried out in accordance with the EHS regulations, and guidelines of Azerbaijan and the stakeholders Holcim and EBRD. Potential risks at work places have to be assessed, like chemicals, mechanical and electrical risks, working at heights, confined space, hot work. A monthly report shall be delivered by the EPC contractor which includes detailed information on safety issues, incidents/accidents, need for corrective measures, conflicts amongst construction workforce or with local residents, grievances of workforce or stakeholders. Sub-contractor related issues shall be included.

An emergency response plan shall be elaborated, including the location and proper use of emergency equipment, procedures of alarm raising and emergency response team notifying, and proper response actions for each foreseeable emergency situation. Accident reporting shall be a standard procedure. Workers, including subcontracted workers, shall have access to free medical service, healthcare treatment and preventative treatment.

The EPC contractor will have to demonstrate the appropriate skills, qualification and/or working experience of his staff and subcontractors to the Supervisor. Construction workforce and sub-contractors will receive comprehensive H&S training at the beginning of an appointment, thereafter on a regular basis throughout the entire construction period. Special safety instructions will be provided for temporary workforce and for young workforce.

GC's appointed personnel for operation of Kiln 6 will appropriately be trained by the EPC contractor. The entire project's operational and management personnel will receive on-the-job training.

The ESMP outline for the construction activities is given in Table 6-1 below.

Standards and guidelines relevant for the detailing of the ESMP action items include, but are not limited to:

- IFC Performance Standards on Social and Environmental Sustainability, 2007, particularly Performance Standard 2
- EBRD Environmental and Social Policy, 2008
- ILO Best Practise Guide “*Safety and Health in Construction*” ILO-OSH (2001)
- Recommendation Concerning the List of Occupational Diseases and the Recording and Notification of Occupational Accidents and Diseases (ILO Recommendation 194)
- Labour Code of the Azerbaijan Republic,
- National Employment Strategy of the Azerbaijan Republic ,
- other relevant legislation of Azerbaijan,
- CSI Health and Safety in the Cement Industry: Guidelines for measuring and reporting, 2005¹
- Health and Safety in the Cement Industry, Examples of good practise, CSI 2004 ²
- Holcim Contractor Control Guidelines, 2004
- Holcim Health and Safety in the Cement Industry
- Holcim - OH&S Handbook incl. the Holcim Fatality Prevention Elements
- GRI Health and Safety Protocol³
- Training Guide Cement and Concrete⁴
- GC Handbook on Personnel Policies and Procedures and overall Holcim Social Responsibility Policy
- GC Company Policy (as per *Handbook on Personnel Policies and Procedures*)
- GC Employee Benefits Plan (as per 19.12.2007)

6.1.2 Operation

GC is responsible for the operation and maintenance of its installations. Operation will be in an environmentally sound manner, in particular to ensure

¹ <http://www.wbcsd.org/web/publications/cement-safety-guide-oct05.pdf>

² <http://www.wbcsd.org/DocRoot/ZWrMh4q84XB116NTjKE8/tf3-health.pdf>

³ http://www.wbcsd.org/web/projects/cement/tf3/GRI-H-S_DraftPC.pdf;
<http://www.wbcsd.org/web/projects/cement/tf3/construc.pdf>

⁴ <http://www.wbcsd.org/web/projects/cement/tf3/d000254.pdf>

compliance with any environmental provisions set out by the competent licensing authority.

The already existing EHS team of GC will handle environmental and H&S issues during operation of the plant. The ISO 14001 environmental management system will be extended onto the operations related to the new dry Kiln 6 Project including the quarry activities.

The EHS team will ensure that all legal requirements for GC are met and all necessary environmental protection measures are taken to avoid potentially adverse effects of plant operation on the environment. The head of the EHS team will ensure that the operation of the plant complies with high environmental standards and the requirements of the Azeri environmental legislation as well as with the Holcim and EBRD guidelines.

Social issues related to the plant and its operations will be dealt with by the GC's CSR team (corporate social responsibility team).

As far as AFR will be used in the future, they become relevant for the H&S management due to their specific characteristics. AFR process safety has to be addressed within the site's procedures and considered in the design. A Holcim directive sets the required standards and complements existing safety procedures on hazard identification and mitigation and emergency response (<http://www.holcim.com/CORP/EN/id/1610652474/mod/gnm50/page/editorial.html>).

The ESMP outline for the operation is also given within Table 6-1 below.

Table 6-1 Environmental and Social Management Plan (ESMP)

General Notes:

Any plan or procedure/work instruction listed in the following will be based on the contractual environmental, health & safety and social responsibility provisions of Garadagh Cement (GC) and requires approval by GC before implementation. Implementation Supervision will be provided by GC. Plans and measures are subject to revision for performance improvement if monitoring reveals weaknesses in implementation. Action item implementation will be benchmarked against key performance indicators. All activities related to construction and operation, will be subject to official Azeri environmental and social inspection within the mandate of the relevant authorities.

Action Item #	Potential Impact / Issue	Mitigation / Management	Responsibility / Implementation	Monitoring / Key Performance indicators	Cost Estimate (Euro)
Construction (New Dry Kiln 6, Shakhgaya West Quarry Base Facilities, Roads/ Rail Rehabilitation)					
C1	Environmental & Social Performance of construction activities	<ul style="list-style-type: none"> • <i>Construction Supervision Plan</i> • Appointment of GC supervisor team; • Regular site inspections and meetings of GC with EPC; • Regular review of reports of EPC and supervision of implementation of EPC Contractor's <i>Management Plans</i>. 	Set up by GC before construction; Implementation GC throughout construction	GC Supervisory team in place including EHS and CSR responsible Monthly reporting of environmental, health & safety and social performance issues and follow up of deficiencies	Management time

Action Item #	Potential Impact/ Issue	Mitigation / Management	Responsibility / Implementation	Monitoring/ Key Performance indicators	Cost Estimate (Euro)
C2	Environmental, Performance of construction activities / Good Practice	<ul style="list-style-type: none"> • <i>Construction Site Management Plan including sub-plans:</i> <ul style="list-style-type: none"> - <i>Spill Prevention and Contingency Plan;</i> - <i>Materials Handling and Storage Instructions</i> - <i>Hazardous Material Handling Plan (incl. international labelling system)</i> - <i>Construction Waste Management Plan;</i> - <i>Construction Site Closure Plan;</i> - <i>Construction Traffic Management Plan (on site and off site)</i> • <i>Designated EPC's Site Manager and EHS-Responsibles</i> 	Setup by EPC prior to construction; implementation by EPC throughout construction under supervision of GC.	EPC's Site Manager and EHS-Responsibles in place; Construction site management plan and subplans incl. work instructions for environmental aspects in place and implementation monitored; internal auditing and reporting by EPC	Management time
C3	Construction Health and Safety	<ul style="list-style-type: none"> • <i>Construction Health and Safety Plan, inter alia including provisions for:</i> - workplace risk-assessments, personal protective equipment (PPE), and work place monitoring (e.g. CO when affected by stack plume) 	Setup by EPC before construction; Implementation by EPC throughout construction under supervision of GC. (in coordination with relevant agencies: Sahil	<ul style="list-style-type: none"> • Work Place Risk assessment undertaken before start of operations; • Health ad Safety Plans and plan for emergency preparedness in place and implemented; • HSE Instructions and PPE 	Management time for plan preparation CO – monitors for work place exposure monitoring: <5,000

Action Item #	Potential Impact/ Issue	Mitigation/ Management	Responsibility/ Implementation	Monitoring/ Key Performance indicators	Cost Estimate (Euro)
		<p>requirements</p> <ul style="list-style-type: none"> - construction workers training and awareness - working at great heights and confined spaces - working under ongoing plant operation / stack emissions - construction traffic safety • <i>Emergency Preparedness Plan</i> for accidents response 	Settlement fire brigade; hospital and relevant district agencies; EHS checks by Azeri Work Inspection)	<p>available</p> <ul style="list-style-type: none"> • Performance according to Holcim Group Standards (Five Cardinal Rules) for all operations. 	
C4	Construction workers welfare /workforce social issues	<ul style="list-style-type: none"> • <i>Social Facilities and Services Plan;</i> • Provision of sanitation, social and medical facilities and services; workers accommodation (TCN) and transport (TCN and local workers); • Provision of facilities and opportunities for workers' recreation and social after work activities; • Social supervision audits incl. 	<p>Setup by EPC in coordination with CG before construction starts (site specific conditions)</p> <p>Implementation by EPC under supervision of GC. (in addition: official supervision by Azeri Work Inspection)</p>	<p>Social services and needs assessment undertaken by EPC/GC staff before start of operations; including special requirements for TCN (socio-cultural aspects)</p> <p>Social facilities and services plan set up and implemented (EPC)</p> <p>Facilities and services in place at commencement of construction</p> <p>Documentation of audits and remedial action where necessary</p>	Establishment of facilities and services part of EPC contract, Management time

Action Item #	Potential Impact/ Issue	Mitigation/ Management	Responsibility/ Implementation	Monitoring/ Key Performance indicators	Cost Estimate (Euro)
		<p>workers interviews;</p> <ul style="list-style-type: none"> Workers Grievance Mechanism; In line with Holcim Owners Standards, application of ILO Core Labour Standards by EPC. 		<p>Records of grievance process</p> <p>Monthly reporting (medical reports and social reports) (EPC)</p> <p>Regular social supervision (GC)</p> <p>Performance of random workers interviews and results evaluation (GC)</p> <p>Individual Information of workers at start of employment performed (EPC)</p> <p>TCN's informed in TCN language (EPC)</p> <p>Continuous availability of interpreters for TCNs</p> <p>Sufficient number and equipment of medical and sanitation facilities according international standards (EPC)</p> <p>Number of accidents (target =0)</p> <p>Number of grievances (target =0)</p>	
C5	Worker	<ul style="list-style-type: none"> Work Site Regulation 	Setup by EPC before	Work site regulation, workers code	Management time

Action Item #	Potential Impact/ Issue	Mitigation/ Management	Responsibility/ Implementation	Monitoring/ Key Performance indicators	Cost Estimate (Euro)
	issues/disputes; Potential friction amongst workforce / TCN – local workers grievances	<ul style="list-style-type: none"> • <i>Workers Code of Conduct</i> • <i>Grievance mechanism</i> • Workers information/training (under consideration of specific socio-cultural aspects of TCN, local Azeri workforce) 	construction starts in coordination with GC; Implementation by EPC under supervision of GC.	of conduct and grievance mechanism set up and implemented Documents in place and communicated Records of grievance processing Monthly reporting (EPC) Supervision by GC Individual information of workers at start of employment; TCN information in TCN language (target = 100%) Continuous availability of interpreters for TCNs Regular training of workforce (consideration of language requirements of TCN) (target = 100%) Management of TCN grievances in TCN language Social supervision with random workers interviews (GC) Number of conflict incidents (target	

Action Item #	Potential Impact/ Issue	Mitigation/ Management	Responsibility/ Implementation	Monitoring/ Key Performance indicators	Cost Estimate (Euro)
				= 0) Number of grievances (target = 0)	
C6	Construction workforce demobilisation	<ul style="list-style-type: none"> • <i>Assistance Program for supporting the re-employment of local workforce</i> • <i>Return Procedure for TCN</i> 	<p>Set-up and Implementation by GC one year before end of peak employment period.</p> <p>Set-up by EPC within 6 months after commencement of construction and Implementation by EPC under supervision of GC.</p>	<p>Plans in place</p> <p>Documentation of measures and tracking of reemployment success</p> <p>Documentation of EPC contractor available</p> <p>Assistance Program set up and implemented</p> <p>Information events for local workforce performed</p> <p>Opportunities for delivery of individual questions and concerns set up</p> <p>Reports on information events; consideration of workforce concerns after information events in the set up of assistance plans, if practical</p> <p>Number of participants of information events (target = 100%)</p>	Management time

Action Item #	Potential Impact/ Issue	Mitigation/ Management	Responsibility/ Implementation	Monitoring/ Key Performance indicators	Cost Estimate (Euro)
				<p>Number of participants in provisions and measures of the assistance program</p> <p>Follow up of performance: number of workforce with a new employment after 1 month, after 3 months</p> <p>Return procedure of TCN set up and implemented, in line with Holcim Owners standards and core ILO standards</p> <p>Implementation of Holcim Owners Standards, especially the core ILO Standards</p> <p>Information of TCN in TCN language</p> <p>Opportunity for delivery of individual questions and concerns established</p> <p>Number of participants in information events (target = 100%)</p> <p>Reporting on information events</p>	

Action Item #	Potential Impact / Issue	Mitigation / Management	Responsibility / Implementation	Monitoring / Key Performance indicators	Cost Estimate (Euro)
				<p>Reporting on return process</p> <p>Number of TCN workforce returned according to return procedure (target = 100%)</p> <p>Incidents with immigration authorities (target = 0)</p> <p>Supervision by GC</p>	
C7	<p>Community relationship</p> <p>Construction related community grievances</p>	<p><i>Community Liaison Plan</i> inter alia including:</p> <ul style="list-style-type: none"> - Appointment of EPC Community Liaison Officer (EPC-CLO) and CL supervisor (GC-CLO); establishment of local community liaison committees (based on present GC community liaison) - Public Information and Awareness campaign; - measures for maintaining good relationship (social events); - Public grievance mechanism incl. conflict resolution procedure 	<p>Setup by EPC in coordination with GC at start of works;</p> <p>Implementation EPC under supervision of GC</p>	<p>Community Liaison Plan Set up and implemented</p> <p>Monthly report by GC community liaison supervisor including improvements and remedial actions agreed with EPC Community Liaison Officer if required</p> <p>3-monthly feedback meetings with local community representatives (if required increase of frequency)</p> <p>KPIs:</p> <ul style="list-style-type: none"> • Liaison officers in place • Worker's code of conduct as part of individual contracts signed by 	<p>Management time</p>

Action Item #	Potential Impact/ Issue	Mitigation/ Management	Responsibility/ Implementation	Monitoring/ Key Performance indicators	Cost Estimate (Euro)
				<p>all members of construction workforce and all (sub-) contractors before start of employment/contract work</p> <ul style="list-style-type: none"> • Community liaison management plan in place before start of construction • Information and awareness raising campaign performed before start of construction • Minutes of meetings with local communities during construction • Follow up and solution of issues raised during meetings, documentation • Documentation, follow up and solution of grievances according to procedure set up in community liaison management plan • Number of meetings with local communities conducted by CLO (target:3- monthly regular meetings plus as needed) • 	
C8	Construction	<ul style="list-style-type: none"> • <i>Construction Traffic</i> 	Setup by EPC before start	Plan in place and communicated	Management time

Action Item #	Potential Impact/ Issue	Mitigation / Management	Responsibility / Implementation	Monitoring / Key Performance indicators	Cost Estimate (Euro)
	traffic safety on-site and off-site	<p><i>Management Plan</i></p> <p>Transport traffic routing (. oversize loads, peak delivery traffic etc.)</p> <p>Instruction of construction workforce and permanent GC workforce</p> <p>Information of local communities</p> <p>Instruction of contractors (e.g. drivers, suppliers)</p>	of works in coordination with GC; Implementation by EPC throughout construction; supervision of implementation by GC.	<p>Recording of violations and corrective measures</p> <p>Monthly reports by EPC</p> <p>Supervision by EC (check of reports)</p> <p>Performance of regular driver trainings (target 100% of drivers as participants)</p> <p>Instruction and information events for workforce performed (construction workforce (interpreters for TCNs), permanent GC workforce); number of participants (target = 100%)</p> <p>Information events for local communities performed, number of participants</p> <p>Instruction and information events for contractors performed (target = 100% participation)</p> <p>Drivers training for contractors performed (target = 100% participation)</p> <p>Number of accidents (target = 0)</p>	Driver training: <5,000

Action Item #	Potential Impact/ Issue	Mitigation/ Management	Responsibility/ Implementation	Monitoring/ Key Performance indicators	Cost Estimate (Euro)
				Number of grievances (target = 0)	
C9	Construction site access and site security	<i>Site Access and Security Plan</i> ; installation of ID swipe card system; training of guards/security staff	Setup by EPC + GC before start of works; Implementation by EPC + GC	Completion of implementation before start of construction Provision of ID card to workforce (target = 100%)	Card system: 10,000 - 20,000
C10	Public Health and Safety issues (Road safety; construction noise/vibration and dust)	<i>Public Health & Safety Plan</i> Addressing public road safety (construction transport and traffic); vibration, noise and dust; health risks related to presence of large number of construction workforce (e.g. sexually transmittable diseases (STD), and public safety issues (such as: potential risk of social unrest because of presence of TCN); <i>Grievance Mechanism</i> (in coordination with <i>Community Liaison Plan</i>)	Set up by EPC before start of works; participation of local community administration and representatives (arranged via established GC community relations); implementation by EPC and supervised by GC.	Public Health and Safety Plan in place and implemented (with participation of local community to be documented) Monthly reports (EPC) Supervision by GC Information events for construction workforce (interpreters for TCNs) performed (target = 100% participation) Information events for local communities performed (number of participants) Number of grievances (target = 0) Number of social unrest incidents in context of construction (target = 0)	Management time

Action Item #	Potential Impact / Issue	Mitigation / Management	Responsibility / Implementation	Monitoring / Key Performance indicators	Cost Estimate (Euro)
				Number of incidents of transmitted diseases in context of construction, (target = 0)	
C11	Local employment opportunities	<p><i>Local Workforce Recruitment Plan</i> as a framework for recruitment procedure; aiming at providing opportunities for employment of local workforce; considering unskilled, semi-skilled and skilled workforce.</p> <p>Local Azeri labour to be recruited wherever possible and that maximum use shall be made of Azeri subcontractors and suppliers. Information about work opportunities will be made available to the local population</p>	<p>Setup by EPC before start of works, implementation by EPC during construction.</p> <p>Supervision by GC</p>	<p>Job posting and information in local communities</p> <p>Transparency of recruitment procedure, documentation and monthly reporting of employment</p> <p>Local workforce recruitment plan set up and implemented; in line with Holcim Owners Standards and Labor Code of Azerbaijan</p> <p>Transparent recruitment procedure in place and implemented; clear job profiles and respective requirements for workforce qualification set up</p> <p>Instruction of recruitment personnel performed</p> <p>Individual documentation of recruitment (interviews etc) and respective decisions</p> <p>Monthly reports on information activities and on response from local</p>	Management time

Action Item #	Potential Impact/ Issue	Mitigation/ Management	Responsibility/ Implementation	Monitoring/ Key Performance indicators	Cost Estimate (Euro)
				<p>communities</p> <p>Up to date information on employment opportunities on GC information boards in local communities displayed</p> <p>Up to date information published in local newspapers and in GC newsletter</p> <p>Up to date information communicated to employment agencies</p> <p>Information events for local communities with update information on employment opportunities performed (number of participants)</p> <p>Number of local workforce employed</p> <p>Follow up of dismissals before end of contract (number, reasons)</p>	
C12	Local economy opportunities	<i>Local Procurement Plan</i>	GC and EPC before start of works; implementation	Local Procurement Plan set up and implemented in line with Holcim	Management time

Action Item #	Potential Impact/ Issue	Mitigation/ Management	Responsibility/ Implementation	Monitoring/ Key Performance indicators	Cost Estimate (Euro)
		Aiming at providing opportunities for procurement contracts with local / Azeri companies in the context of all areas of service requirement during construction (under consideration of Holcim/GC contractors policy)	during construction	Owners Standards Monthly reporting by EPC Supervision by GC Capacity assessment of local enterprises performed, participation of local communities Information events for local contractors performed (information event for local businesses in cooperation with local Azeri entrepreneur organisations) Number of local contractors	
C13	Archaeological finds during ground works	<i>Chance Finds Procedure</i> , Awareness training of workforce	Setup: by GC before construction works Implementation by EPC under supervision of GC.	Implementation of procedure before start of construction Chance finds report by EPC (monthly status) Documentation of involvement of authorities	Management time
C14	Cleanup of localized historic contaminations on-	<i>Site Remediation Plan</i> (sampling, if required cleanup,	CKD removal already accomplished for Project construction ground. Set	Site remediation action plan in place	Sampling/analysis approx. 5,000 (depends on

Action Item #	Potential Impact/ Issue	Mitigation/ Management	Responsibility/ Implementation	Monitoring/ Key Performance indicators	Cost Estimate (Euro)
	site (CKD, hydrocarbon)	removal and disposal)	up of plan by GC within 1 year for remaining site areas.		number of samples)

Action Item	Potential Impact / Issue	Mitigation / Management	Responsibility Implementation	Monitoring / Key Performance indicator	Cost Estimate (Euro)
Operation of New Dry Kiln 6					
O1	Air emissions	<p><i>Air Emissions Control Plan:</i> Regular (i.e. daily) evaluation of continuous stack emissions monitoring (PM10, NO_x, SO₂) against standards, control of pressure drop at bag filters; immediate exchange of damaged filter bags; optimization of operation in order to reduce the emissions; ensure calibration of monitoring equipment;</p> <p>For organic substances and heavy metals in PM emission single measurement campaign every 3 years.</p>	Procedure set-up and implementation by GC with start of operation	<p>Monthly report on continuous air emissions monitoring data including pressure drop at bag filters; maintenance and inspections</p> <p>Reports on discontinuous measurements (every 3rd year, first within 6 months after start of operation)</p> <p>Compliance with local and international air emission standards (cf. ESIA Section 2.11.2) (target = all met)</p> <p>Report on calibration of monitoring equipment; every 3rd year</p>	<p>Continuous monitors: 30,000 – 50,000 (already included in Capital expenditure budget of the project)</p> <p>Calibration: 5,000 – 10,000 (every 3rd year)</p> <p>Discontinuous measurements: 30,000 – 50,000 (every 3rd year)</p> <p>Management time for reporting</p>
O2	Impact on ambient air quality	<p><i>Ambient Air Monitoring Plan:</i> Passive sampling (diffusion tubes) of NO_x and dust deposition sampling</p>	Procedure set-up and implementation by GC Monthly over 12 continuous	Monitoring reports completed (one before and one after Kiln 6 operation start)	Sampling tubes and analyses: 10,000 - 20,000

Action Item	Potential Impact / Issue	Mitigation / Management	Responsibility Implementation	Monitoring / Key Performance indicator	Cost Estimate (Euro)
		and analysis at defined locations (envisaged: 16 points) in the plant's vicinity and airshed; evaluation against international standards	months before commencement of operation, and 12 continuous months after start of operation (total 2 x 12 continuous months)	Change of results compared against local and international ambient air quality standards (cf. ESIA Section 3.8.1) (target = no significant change, e.g. less than +10% caused by GC)	Management time for sampling and reporting
O3	Discharge of wastewater	<i>Waste Water Monitoring Plan:</i> Regular monitoring of on-site WWTP effluent.	Set up and implementation by GC (frequency at start up as per manufacturer recommendation; monthly for regular operation)	Monthly report on WWTP effluent monitoring data Compliance with local and international wastewater discharge standards (target = all met)	<5,000 p.a. Management time for reporting
O4	Noise emissions/impact	<i>Noise Monitoring Plan:</i> Regular (monthly) monitoring of work place exposure noise on site and off site community noise at dedicated reference locations (Set up and implementation by GC; Reference measures before start of Project operation. Envisaged: 10 monitoring points (4 at outskirts of Sahil Settlement (first row of buildings facing towards the site and S, SE and E of the	Noise measurements Compliance with local and international environmental noise standards (cf. ESIA Section 3.9.2) (target = impact of GC 3 dB(A) below standard)	Noise meter: 5,000 Management time for measurements and reporting

Action Item	Potential Impact / Issue	Mitigation / Management	Responsibility Implementation	Monitoring / Key Performance indicator	Cost Estimate (Euro)
			site plus at the northern end of Sahil) plus 6 locations along the SE boundary of the site); day and night time measurements; two times per year		
O5	Greenhouse gas (GHG) emissions	<i>GHG Emissions Reduction Plan:</i> Annual reporting of GHG emissions; including evaluation of potential reduction measures (clinker ratio, AFR, fuel); implementation of reduction measures	Set up and implementation by GC; reporting and review starts with first year of operation of the new dry Kiln 6 Project.	Documentation on reaching of project concept figures: gross CO ₂ target 606 kg/ t cement, net CO ₂ target 587 kg/ t; clinker ratio 1.58; clinker in cement 72-73%	Management time
O6	Explosion risks	<i>Explosion Prevention and Protection Plan:</i> Identification of explosion risks; explosion prevention measures; explosion zones designation; regular inspection of areas and safety equipment	Procedure set-up prior to start of operation and implementation by GC	Implementation of Plan prior to start of operation Annual report and documentation of safety inspections, maintenance, number of incidents (target = 0)	Management time
O7	Storage and handling of hazardous	<i>Work Place Risk Assessments & Exposure Monitoring Plan:</i> Modification and amendment of	Procedure set-up and implementation by GC	Work Place Risk Assessment undertaken before start of operations (target: completeness	Management time Monitoring:

Action Item	Potential Impact / Issue	Mitigation / Management	Responsibility Implementation	Monitoring / Key Performance indicator	Cost Estimate (Euro)
	materials and Noise Exposure	existing HSE System for the modernised plant conditions; Identification of hazardous materials related work places; identification of work places with high noise levels; prevention and mitigation measures; potential exposure; regular monitoring of exposure and employee health check-ups	Prior to start of operation	status = 100%); Health and Safety Plans in place and implemented; HSE Instructions and PPE available (target = 100% where applicable); Monitoring of workplace exposure regarding hazardous substances and noise (target: all identified areas of potential risks) Performance according to Holcim Group Standards (Five Cardinal Rules, Fatality Prevention) for all operations	<5,000 workplace exposure <5,000 noise
O8	GC production workforce reduction due to new technology and increase in plant efficiency	<i>Retrenchment Plan</i> Including provisions for timely consultation of employees, assessment of on-site job opportunities, interviews to analyse social profile, skills and competence, special training	Set up 1 st Q. 2009 and implementation by GC Human Resources Department until commencement of operation with new dry Kiln 6	Retrenchment plan in place containing the elements as outlined in ESIA Section 5.13; Records of staff assessments and proceedings	GC HR Department management time; costs for training and assessments, (retrenchment related costs tbd.)

Action Item	Potential Impact / Issue	Mitigation / Management	Responsibility Implementation	Monitoring / Key Performance indicator	Cost Estimate (Euro)
O9	Community relations and benefit sharing	<p><i>Community Support Program</i></p> <p>Continuation of GC community support activities in consultation with the project affected communities Sahil and Umid and based on community needs assessment (GC 2008) (in line with the GC / Holcim Group principles, <i>i.e.</i> support be of public interest, public welfare enhancement, transparency).</p>	Set-up and implementation by GC - CSR Department on annual basis.	<p>Community support program set up and implemented together with communities, monitoring and documentation of implementation, and annual reporting</p> <p>Where practical, coordination with community support of other companies (e.g. BP in Umid) in order to achieve best results</p> <p>Regular assessment of community needs (as per assessment 2008)</p> <p>Regular communication of community support activities</p> <p>Set up of distinct annual budget for support program</p> <p>Regular community meetings</p> <p>Number of participants in community liaison events</p> <p>Number of projects identified and implemented</p>	<p>Set-up, implementation and reporting: Management time</p> <p>Program details, measures, activities: Tbd.</p>

Action Item	Potential Impact / Issue	Mitigation / Management	Responsibility Implementation	Monitoring / Key Performance indicator	Cost Estimate (Euro)
				Number of regular activities in the communities enhanced by GC community support program, number of participants	

Action Item	Potential Impact / Issue	Mitigation / Management	Responsibility Implementation	Monitoring / Key Performance indicator	Cost Estimate (Euro)
Operation of Shakhgaya West Quarry					
Q1	Loss of a habitat for the red listed plant <i>Iris acutiloba</i>	<i>Translocation Plan</i> Identification of transplant area for the red-listed iris, Location and Dig-up Survey and transplantation (autumn 2009 and 2010) to be accomplished before start of quarry operation;	Set up and implementation by GC before start of quarry operations	Site for transplantation identified and secured for use; Transplantation undertaken before impact at quarry site Annual spring growth success monitoring on new site (first 5 years).	To be determined: costs for ecological experts; costs for land; costs for equipment (dig-up/collecting and planting)
Q2	Quarry operation, and closure	<i>Detailed Quarry and Quarry Base Operation Plan</i> Incl. environmental aspects: - Stripping of soil/ weathered surface and storage of material for rehabilitation - Cleanup of site, - Surfacing, securing of slopes and habitat restoration with semi-desert plant seeds	Set up and implementation by GC	Plans developed and in place before start of quarry operations	Management time for plan set-up; timely accrual for quarry closure and site rehabilitation activities

Action Item	Potential Impact / Issue	Mitigation / Management	Responsibility Implementation	Monitoring / Key Performance indicator	Cost Estimate (Euro)
Q3	Workers Health and Safety	<ul style="list-style-type: none"> • <i>Workplace risk assessment</i> for all quarry operation related activities (Shagkhaya West and Clay quarry sites, S.-West quarry base/crusher & train loading, transportation routes (materials hauling, rail transport, staff transportation) • <i>Health and Safety Plans</i> for each quarry related activity incl. special EHS instructions and provisions for extraction method (blasting). 	Set up by Contractors and GC Supervision by GC	KPIs: cf Action Item O7 <ul style="list-style-type: none"> • Work Place Risk assessment undertaken before start of operations; • Health ad Safety Plans in Place and implemented; • HSE Instructions and PPE available • Performance according to Holcim Group Standards (Five Cardinal Rules) for all operations. 	Management time Training: < 5,000 – 10,000
Q4	Use of explosives at quarry	<i>Explosives Transport, Storage and Handling Plan</i> (In case of blasting method will be applied)	Set up by GC in cooperation with contractors; implementation by contractors and GC, supervision by GC	Plan developed and in place before start of operation; training of staff accomplished	Management time Training: < 5,000
Q5	Traffic interference of GC operational traffic (incl. contractors) and	<i>Road and Rail Traffic Safety Plan</i> road safety measures (Warning signs, speed limit, entry control of the road at the quarry base; signalled	Set up by GC in cooperation with contractors; implementation by contractors and GC,	Consultations with relevant authorities and road users undertaken; Road usage procedure	Management time Training: < 5,000

Action Item	Potential Impact / Issue	Mitigation / Management	Responsibility Implementation	Monitoring / Key Performance indicator	Cost Estimate (Euro)
	public traffic/stone cutters on quarry access and transport roads	rail crossings) drivers training Road usage procedure for GC private road used by stone cutters.	supervision by GC	developed, safety measures implemented, and R&R Traffic Safety Plan communicated to affected people (target = 100%); Training and instructions held for GC and contractor staff (target = 100%) Monitoring and monthly reporting of near misses / incidents (target = 0)	