

**Luminova - GUATEMALA**  
**Environmental and Social Action Plan (ESAP)**

No.	Action	Deliverable	Delivery date
<b>PS 1: Assessment and Management of Environmental and Social Risks and Impacts</b>			
1.1	Reference: Policy		
1.1.1	Develop an environmental, social, and occupational health and safety (OHS) policy.	Sustainability Policy.	30 days after the first disbursement.
1.1.2	Communicate the Sustainability Policy to all Company employees, including contractors and temporary workers, as well as to other external stakeholders.	Evidence of dissemination.	60 days after the first disbursement.
1.2	Reference: Identification of Risks and Impacts		
1.2.1	Develop a corporate procedure to identify, characterize, and evaluate the environmental and social (E&S) and OHS risks and impacts generated by remodeling acquired properties.	Procedure for Risk and Impact Identification.	90 days after the first disbursement.
1.2.2	Implement the Procedure for Risk and Impact Identification.	Evidence of implementation.	Periodically, as part of the Environmental and Social Compliance Report (ESCR).
1.3	Reference: Management Programs		
1.3.1	Develop a Plan for the Efficient Use of Water Resources.	Plan for the Efficient Use of Water Resources.	90 days after the first disbursement.
1.3.2	Develop a Road Safety Plan that includes road emergency preparedness and response protocols with emergency assistance measures for drivers and third parties.	Road Safety Plan.	90 days after the first disbursement.
1.3.3	Develop a continuous monitoring procedure for the quality of the water discharged by the Water Treatment Plants into the Novoswiss and Helvetia infiltration wells, which should include a description of all the parameters provided by local legislation and by the General Guidelines for the manufacture of pharmaceutical products.	Effluent Management Procedure.	90 days after the first disbursement.
1.3.4	Develop an air emissions management plan for each of the boilers that includes: i) quantification of greenhouse gas emissions (Scopes 1 and 2), ii) monitoring requirements for emissions from boiler stacks in all operations, and iii) compliance assessment of stationary source emissions (all types) with reference to local regulations and applicable limits contained in the World Bank's General Environmental, Health, and Safety Guidelines (the "General Guidelines").	Emissions Management Plan.	90 days after the first disbursement.
1.3.5	Implement the abovementioned Management Programs.	Evidence of implementation.	Periodically, as part of the ESCR.
1.4	Reference: Emergency Preparedness and Response		
1.4.1	Prepare an Emergency Preparedness and Response Plan (EPRP) specific to each plant, identifying the different emergency scenarios and response procedures for each scenario and, in the case of Helvetia, also incorporating: i) a detailed emergency response plan for emergencies whose consequences extend beyond the plant's property boundaries; ii) coordination activities with the communities surrounding the Helvetia plant; and iii) emergency response drills.	EPRP	90 days after the first disbursement.
1.4.2	Implement the EPRP in each of the Company's plants.	Evidence of implementation.	Periodically, as part of the ESCR.
1.5	Reference: Monitoring and Review		
1.5.1	Establish a corporate procedure for comprehensive and regular monitoring and control of E&S and OHS management programs in order to measure their effectiveness, including the following Key Performance Indicators (KPIs) i) Lost Time Incidence Frequency Rate (LTIFR: number of injuries per million hours worked); ii) accident free days; iii) number of training events conducted on accidental release measures, including personal precautions, protective equipment, and emergency procedures, number of workers, and percentage of workers trained; iv) greenhouse gas emissions (ton of CO <sub>2</sub> e); v) water consumption (m <sup>3</sup> ); vi) energy use (kWh); vii) wastewater volume; viii) air emissions gas concentrations; ix) number and type of employee complaints; x) number of E&S and emergency response training days provided to new and existing employees, including	Procedure for comprehensive monitoring and control.	120 days after the first disbursement.

	supervisors; xi) number of safety audits conducted; and xii) number and type of complaints from communities and other stakeholders.		
1.5.2	Implement the Procedure for comprehensive monitoring and control.	Evidence of implementation.	Periodically, as part of the ESCR.
1.6	Reference: Stakeholder Engagement Plan		
1.6.1	Develop a stakeholder engagement plan for the Helvetia plant that includes the following elements, among others: i) engagement principles, goals, and criteria; ii) requirements and regulations; iii) risk and impact analysis; iv) stakeholder identification, characterization, and prioritization, including vulnerable groups; v) forms of engagement with each group; vi) description of the grievance mechanism; and vii) resources and responsibilities.	Stakeholder Engagement Plan.	120 days after the first disbursement.
1.6.2	Implement the Stakeholder Engagement Plan.	Evidence of implementation.	Periodically, as part of the ESCR.
1.7	Reference: External Communication and Grievance Mechanism		
1.7.1	Develop a grievance mechanism through which communities can consult, express concerns, or file complaints, to include: i) methods for capturing grievances and complaints (telephone number, website, and email address); ii) maximum response time to process complaints; iii) roles and responsibilities of the employee or team that receives, registers, validates, investigates, and determines solution alternatives for external public communications; and iv) guidelines to monitor, document, and communicate responses to the complainants.	External Grievance Mechanism.	120 days after the first disbursement.
1.7.2	Implement the External Grievance Mechanism.	Evidence of implementation.	Periodically, as part of the ESCR.
<b>PS 2: Labor and Working Conditions</b>			
2.1	Reference: Human Resources Policies and Procedures		
2.1.1	Update the Organizational Development Guidelines to include explicit references to: i) the existence of the internal grievance mechanism; ii) zero tolerance of child labor and forced labor; and iii) recognition of the right to collective bargaining and freedom of association.	Updated Organizational Development Guidelines.	30 days after the first disbursement.
2.1.2	Share the updated Corporate Organizational Development Guidelines with all the Company's employees, including contractors and temporary workers.	Evidence of dissemination.	60 days after the first disbursement.
2.2	Reference: Occupational Health and Safety		
2.2.1	Develop an OHS Gap Analysis to include structural, electrical, fire safety, and proper use of Personal Protective Equipment audits.	OHS Gap Analysis.	120 days after the first disbursement.
2.2.2	Prepare a corrective OHS plan to close the gaps identified in the OHS Gap Analysis.	Corrective OHS action Plan.	150 days after the first disbursement.
2.2.3	Implement the Corrective OHS Plan.	Evidence of implementation.	As per the Corrective Action Plan schedule.
<b>PS 3: Resource Efficiency and Pollution Prevention</b>			
3.1	Reference: Greenhouse Gases		
3.1.1	Monitor emissions from boiler stacks at Novoswiss and Helvetia, assessing their compliance with local regulations and applicable limits of the General Guidelines.	Stack emission measurement results	60 days after the first disbursement.
3.1.2	If measurements exceed the maximum allowable limits, perform a dispersion analysis of emission concentrations (SO <sub>2</sub> , NO <sub>2</sub> , and total suspended particulate matter) emitted by the boilers to determine possible impacts on sensitive receptors (residential dwellings, schools, and health centers).	Dispersion Analysis.	120 days after the first disbursement.
3.1.3	If the dispersion analysis shows impacts on sensitive receptors, submit a corrective action plan (with concrete actions and implementation dates) to ensure that these emissions comply with national regulations and the limits of the General Guidelines.	Corrective action Plan – Emissions.	180 days after the first disbursement.
3.1.4	Implement the Corrective Action Plan - Emissions	Evidence of implementation.	As per the Corrective Action Plan schedule.
3.2	Reference: Effluents		

3.2.1	Submit an Effluent Corrective Action Plan (with concrete actions and an implementation schedule) for the Novoswiss and Helvetia plants to ensure compliance with the maximum allowable limits under local legislation and the World Bank's General Guidelines for the manufacture of pharmaceutical products.	Corrective action Plan – Effluents.	Prerequisite to the first disbursement of the loan.
3.2.2	Implement the Corrective Action Plan – Effluents.	Evidence of implementation.	As per the Corrective Action Plan schedule.
3.2.3	Submit a copy of the engineering, procurement, and construction contract ("EPC Contract") for the Helvetia Wastewater Treatment Plant.	Copy of the EPC Contract.	Prerequisite to the first disbursement of the loan.
3.2.4	Report the quality of Novoswiss and Helvetia wastewater against Guatemalan standards and the General Guidelines for the manufacture of pharmaceutical products.	Effluent Laboratory Report.	Quarterly until compliance with Guatemalan standards and the General Guidelines is demonstrated and then as part of the ESCR.
3.4	Reference: Pesticide Use and Management		
3.4.1	Implement an integrated vector management program that includes the use of cultural, mechanical, and biological control practices to eliminate the use of compounds classified as Ia/Ib by the World Health Organization.	Integrated Vector Management Program.	180 days after the first disbursement.