

ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEMS



Creating Markets, Creating Opportunities

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Senior Asia ESG Lead

February 09, 2021

Environmental and social risks of hydroelectric dams

News

Workers plunge to death as scaffolding cable snaps at dam construction site

By Tran Hoa, Pham Linh May 25, 2020 | 10:37 pm GMT+7



The injured patients in a treatment room at Kon Tum General Hospital in Kon Tum Province after the accident, May 25, 2020. Photo by VnExpress/Tran Hoa.

MAHARASHTRA

Death toll in Ratnagiri dam breach incident climbs to 18, rescue operation continues

The dam was breached late on Tuesday night and it created a flood-like situation in areas near the dam.



NEWS

LESOTHO ECONOMIC, SOCIAL AND CULTURAL RIGHTS

Lesotho: Polihali Dam construction puts nearly 8,000 people at risk of displacement

6 February 2020, 10:33 UTC

Nearly 8,000 people are facing the loss of their homes or livelihoods as construction begins around a new dam in Lesotho, Amnesty International said today. The organization is calling on authorities to halt construction of the Polihali Dam, which will supply water to South Africa, until affected communities, in Mokhotlong district, have been properly consulted and compensated.

Work paralysed at Karuma dam as workers go on strike

THURSDAY APRIL 13 2017



At least 2,000 employees at Sinohydro Corporation Ltd, the Chinese firm undertaking the construction of the 600MV Karuma power dam in Kiryandongo District have laid down their tools. The employees are complaining of low wages, alleged harassment by their Chinese supervisors, poor working conditions like limited access to clean drinking water, limited toilet facilities and protection gears among others.

Sinohydro Corporation Ltd employees on strike. Photo by Julius Oeungi.

News > Latin America

Reclaiming Water: Chilean Fight Against US Dam Project Heats Up



Dam blamed for hundreds of dead fish in Brunswick

by WGME | Thursday, October 20th 2016



Ed Friedman says around a thousand migrating alewives were cut up by the dam's turbines. (Ed Friedman)

TOPSHAM (WGME) - Hundreds of fish are dead along the Midcoast, and one watchdog group believes a hydropower plant in Brunswick is to blame.

Ed Friedman says he took photos Sunday underneath the green bridge separating Brunswick and Topsham. He says around a thousand migrating alewives were cut up by the dam's turbines.

These risks present themselves as:

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The injured patient
Province after the a



NEWS
LESOTHO ECONOMIC, SOCIAL AND CULTURAL RIGHTS

Lesotho: Polihali Dam construction puts nearby

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- **Reputational risks:** negative image of a company due to its bad environmental and social practices
- **Compliance risks:** fees and fines to rectify environmental and social damage

Both reputational and compliance risks
translate into **financial risks**

MAHARASHTRA

Death toll in Ra 18, rescue oper

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Sinohydro Corporation Ltd employees on strike. Photo by Julius Oeungi.

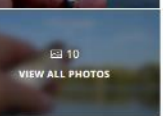


Ed Friedman says around a thousand migrating alewives were cut up by the dam's turbines. (Ed Friedman)



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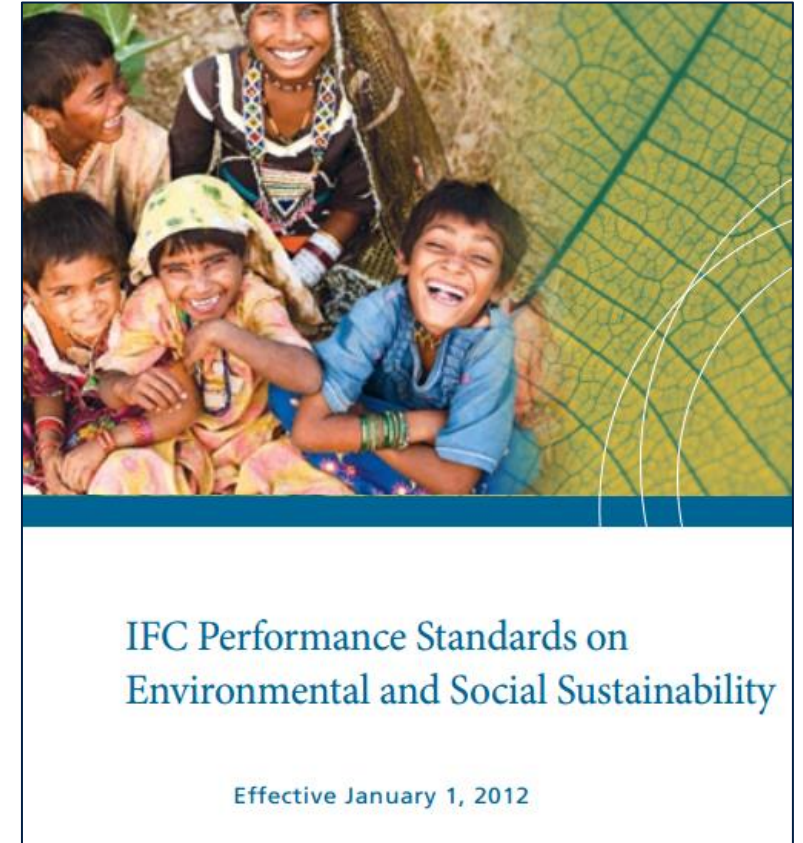


10
VIEW ALL PHOTOS

What are IFC Performance Standards?

- ✓ Describe potential environmental and social risks
- ✓ IFC clients must pay particular attention to these risks
- ✓ Help the client to manage E&S risks and conduct business in a sustainable manner

Performance Standard 1: E&S Management system
Performance Standards 2-8: E&S Performance criteria



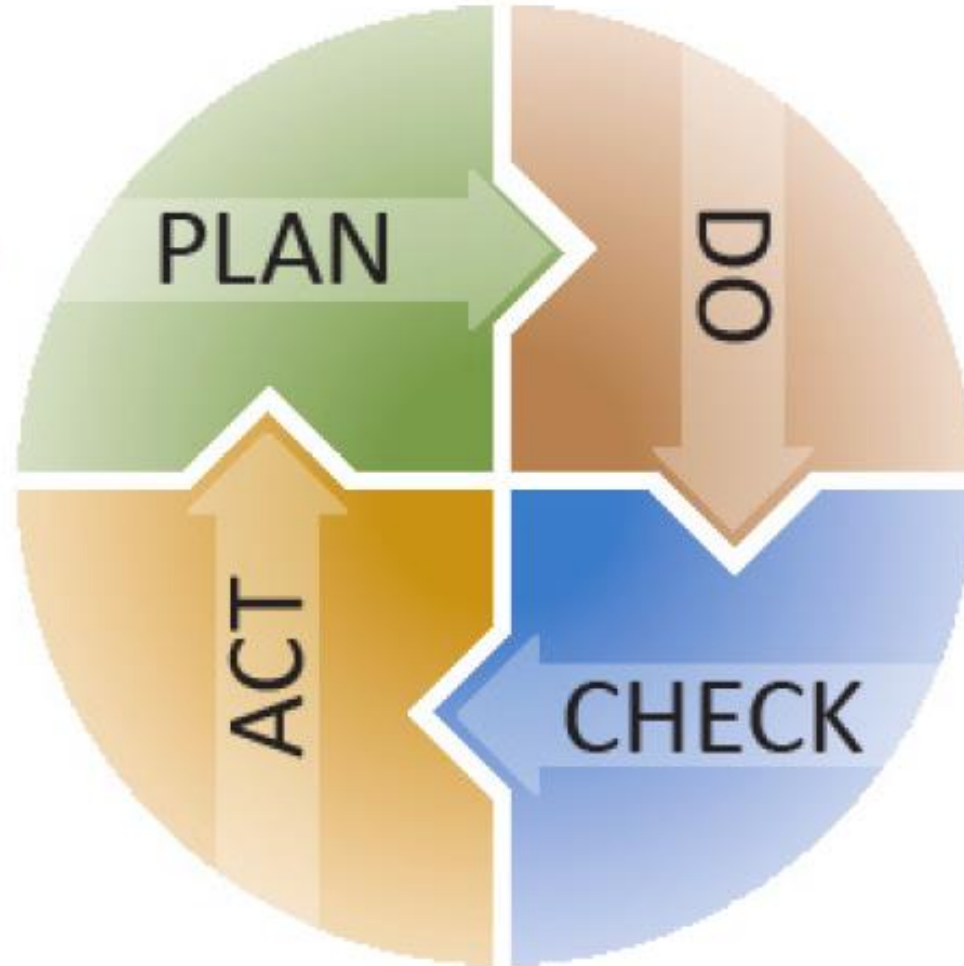
Management Systems = Continuous improvement

Identifying and analyzing the risks and objectives

What is important for you as an organization and what are you going to do about it?

Implementing the improved solution

What will you change if results are not what you expected?



Developing and implementing a potential solution

What actions will you take? Who, what, where, when and how?

Measuring how effective the solution was, and analyzing whether it could be improved

Did you see the change you expected after implementing the actions?

IFC Performance Standard 1: Environmental and Social Management System



Policy – What is your commitment?

What it is?

Establish expectations for conduct (objectives and rules).

Why is it important?

Signal to ALL that Environmental and Social performance is important.

How do I start?

Commit to comply with E&S regulations

Commit to conform to E&S sustainability standards (IFC Performance Standards and WBG EHS Guidelines)

Identification of risks and impacts

Is the starting point! You need to understand your risks to manage them.



Identification of risks and impacts – Key considerations

Environmental and Social Impact Assessment (ESIA): Consider IFC Performance Standards in the Terms of Reference for the ESIA. It reduces the need of complementary studies.

Capacity: Rely on teams with adequate expertise and skills.

Scope: Include all project components, associated facilities (e.g. transmission line), and activities outsourced to contractors.

Dynamic and ongoing: Throughout the life of the project – the ESIA is just the first step.

Consultation: Involve stakeholders, affected communities, contractors, workers.

Identification of risks and impacts – Dig deep - the devil is in the details!

Hidroelectrica La Higuera – greenfield 155MW run-of-river hydroelectric plant situated in Chile. Sponsor: Committed senior management with robust management structure.

- ✓ Failed to assess worse case scenario in cases of extreme drought
- ✓ Run-of-River and no net consumer of water – company minimized importance of effects with downstream users
- ✓ After two consecutive years of drought, irrigation cooperative of 6,300 farmers had issues with availability of water
- ✓ Issue was not net consumption but time when water was available
- ✓ Since it was a peaking plant, water was available only 6-8 hours per day
- ✓ High visibility in media and lawsuit requesting stoppage of operations

Management Programs – The mitigation hierarchy

Example

AVOID
Don't do it



MINIMIZE
Reduce the impact of what you are doing



COMPENSATE/OFFSET
You've done it. What will you do now?

Plan trajectory of the TL away from sensitive biodiversity areas.



Remove trees before bird nesting season.
Install bird diverters to prevent collision.



Regenerate and protect areas with native vegetation. Improve habitat for affected species.

Avoiding the impact is often the cheapest option!

Management Programs

What – environmental and social risks you need to address

Why – reasons (objectives) for the actions and procedures, and the expected results (targets)

How – actions and procedures to be implemented to address the risk

When – timeframe and deadlines

Who – responsible people

Management Programs

Required plans, processes and procedures must be documented.

- ✓ Land Acquisition Framework and Procedures
- ✓ Resettlement and Livelihood Restoration Plan
- ✓ Biodiversity Action Plan
- ✓ Influx Management Plan – mitigation of risks linked to project induced immigration
- ✓ Stakeholder Engagement Plan
- ✓ Indigenous Peoples Plan
- ✓ Cultural Heritage Management Plan – Chance Finds Procedure
- ✓ Workforce Management Plan – terms of employment, benefits, accommodations, demobilization
- ✓ OHS Plan
- ✓ Waste Management Plan
- ✓ Hazardous Materials Management Plan
- ✓ Spill Prevention Plan
- ✓ Blasting Explosives Management Plan
- ✓ Transportation Safety/ Traffic Management Plan
- ✓ Emergency Preparedness and Response Plan
- ✓ Dam Safety Plan
- ✓ Site Security Management Plan
- ✓ Noise, Vibration, and Dust Control Plan
- ✓ Erosion Control Plan
- ✓ Site Rehabilitation Plan
- ✓ Contractors Assurance Plan

Management Programs – Managing contractors E&S Performance

- ✓ Communicate E&S requirements to bidders
- ✓ Include E&S performance criteria in the selection of contractors
- ✓ Include E&S provisions in contracts – what do contractors need to comply with
- ✓ Include penalties for poor E&S performance
- ✓ Oversee E&S performance of contractors during construction

The project sponsor is ultimately responsible!

Do not outsource E&S responsibility to contractors.



GOOD PRACTICE NOTE

Managing Contractors' Environmental
and Social Performance

Organizational capacity and competency

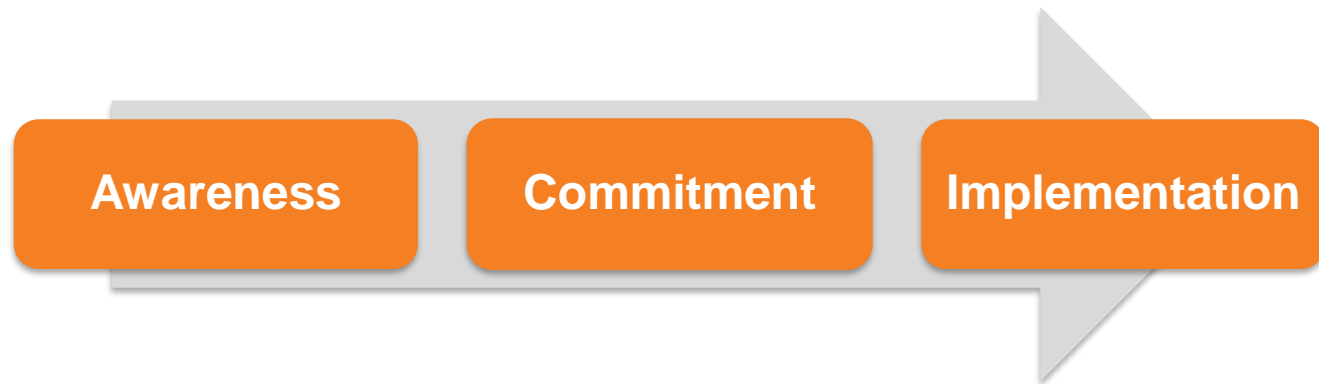
- ✓ E&S Team leader with access to senior management
- ✓ Dedicated multi-departmental team
- ✓ Budget spending authority
- ✓ Involved in business decisions

The implementation of E&S plans, processes and procedures requires coordination among all parties involved in the project.

Organizational capacity and competency

A management system is trained committed people regularly following procedures. How do you make this happen?

- ✓ Integrate ESMS responsibilities in job descriptions and performance evaluations
- ✓ Progressive training:



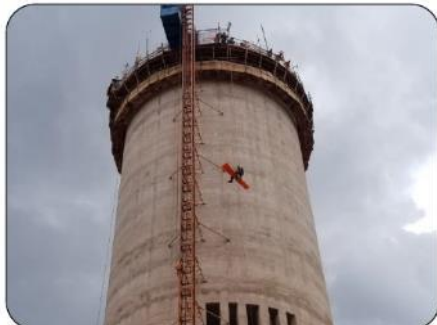
- ✓ Training that addresses knowledge, skills and attitudes

Emergency preparedness and response

Even when you are managing your risks, accidents can happen!
Being prepared can dramatically reduce the impact on workers, communities, and company's facilities.

Key aspects:

- ✓ Identify potential emergency scenarios: earthquakes, landslides, flooding, glacial lake outburst flood (GLOF), explosion, fire, civil unrest, release of hazardous substances, OHS accidents, pandemics
- ✓ Emergency equipment in line with risk assessment
- ✓ Regular training and drills in all shifts
- ✓ Communicate and collaborate with local communities and government agencies
- ✓ Revise your emergency plan periodically



BOP - CHIMNEY - RESCUE AT HEIGHT



RWI – TIME X RESPONSE

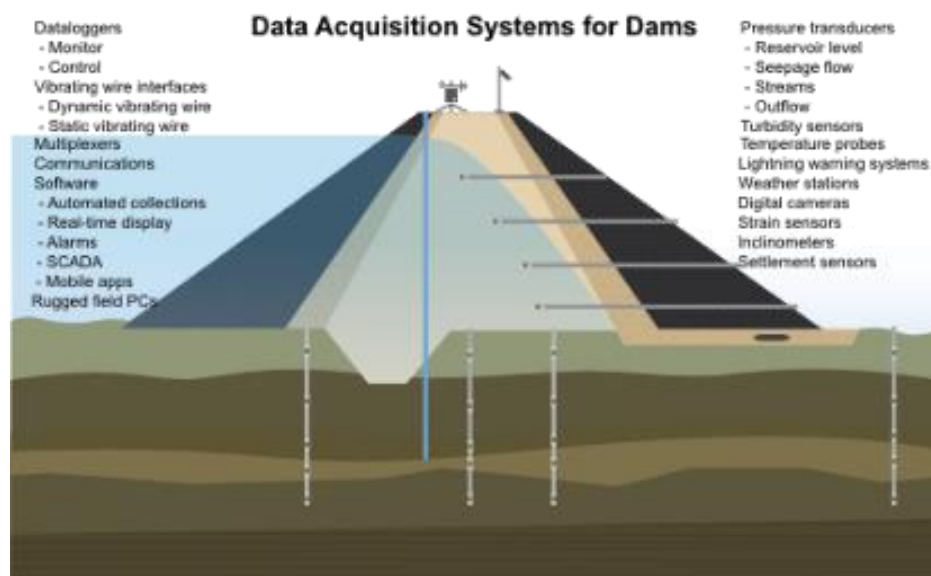


SITE
FIRE FIGHTING

5. Emergency preparedness and response – Dam Safety

Failure of a dam as a result of natural phenomena or of inadequate design and maintenance can have disastrous consequences.

World Bank's Operational Policy [OP] 4.37, together with Bank Procedure [BP] 4.37, on Dam Safety establishes requirements for projects financed by the WB.



Stakeholder engagement

Your company can impact many people.
They can impact your business in return.



Stakeholder engagement – Affected Communities



It is the company's responsibility to obtain the social **license to operate**:

- ✓ Prioritize engagement with those most impacted
- ✓ Identify vulnerable groups that may require additional support for coping with negative impacts, but also for taking advantage of project's benefits (e.g., jobs)
- ✓ Provide early, timely, documented and meaningful information
- ✓ Provide communities with opportunities to express their concerns and suggestions
- ✓ Document concerns and suggestions
- ✓ Report back on what has been put in place to address concerns and suggestions
- ✓ Build relationships over time

External communication and Grievance mechanism

- ✓ Establish communication channels for people to present – open or anonymously – questions, concerns and complaints
- ✓ Assign team with adequate competence and skills
- ✓ Implement procedure(s) for reception, registration, resolution, monitoring
- ✓ Establish a system to communicate back decisions taken and implementation progress



PROYECTO PERU LNG
Metanarita

Procedimiento para la Atención de Reclamos

Relacionados a las actividades del Proyecto PERU LNG en el área de influencia directa de la Planta

El procedimiento de atención de reclamos sirve para ayudar a solucionar las consultas y reclamos que la población del área de influencia directa del Proyecto PERU LNG pudiera tener, que puedan haber sido producidos por las actividades o por el personal del Proyecto PERU LNG.

Cualquier persona natural, agrupación o población involucrada en el área de influencia directa de la planta de PERU LNG puede presentar un reclamo.

1 Se recibe el reclamo en persona, en el momento de la visita al área de influencia directa del Proyecto PERU LNG, o a través de canales telefónicos o por correo electrónico.

2 Se recibe el reclamo, se le da la bienvenida y se le explica el procedimiento de atención de reclamos.

3 Se recibe el reclamo, se le da la bienvenida y se le explica el procedimiento de atención de reclamos.

4 Si el reclamo es complejo, se presenta una propuesta de solución y se le explica al reclamante la solución y se le explica el procedimiento de atención de reclamos.

5 Si el reclamo no es complejo o se resuelve de inmediato, se le explica al reclamante la solución y se le explica el procedimiento de atención de reclamos.

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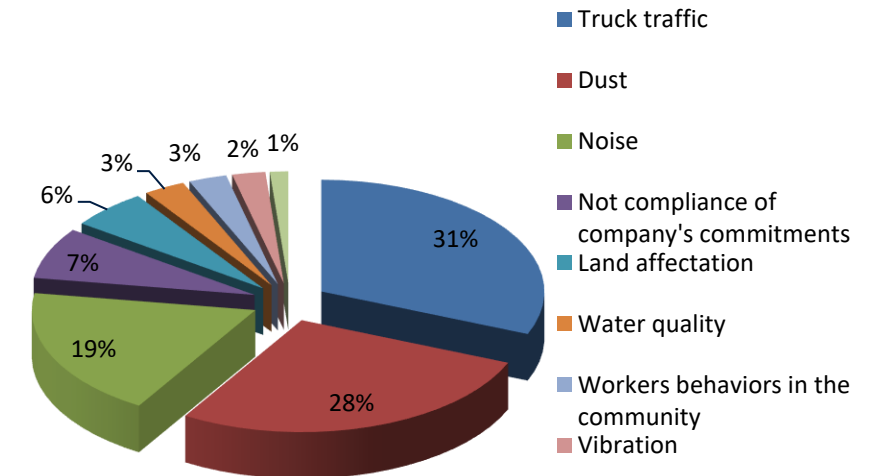
LINEA DE ATENCIÓN AL CLIENTE: 0800 100 1000
 Oficina: Calle Pinar, Miraflores 1111, Oficina: Calle Pinar, Miraflores 1111
 Lima, Perú. Teléfono: +51 1 426 1111

In case of serious complaints from affected communities, you may need independent mediators for resolution

Dedicated capacity and expertise are required to deal with grievances from gender-based violence.

An effective Grievance Mechanism is:

- ✓ Established early in the process (before land acquisition)
- ✓ Provides confidential and anonymous channels
- ✓ Well-publicized
- ✓ Easily accessible and at no cost
- ✓ Predictable – people know when they can expect a response
- ✓ Transparent about process and outcomes
- ✓ Drives continual improvement



While contractors may be responsible for implementing corrective measures, the reception of complaints, and the monitoring of resolutions must be centralized by the project sponsor.

*An effective Grievance Mechanism provides **early warnings!***

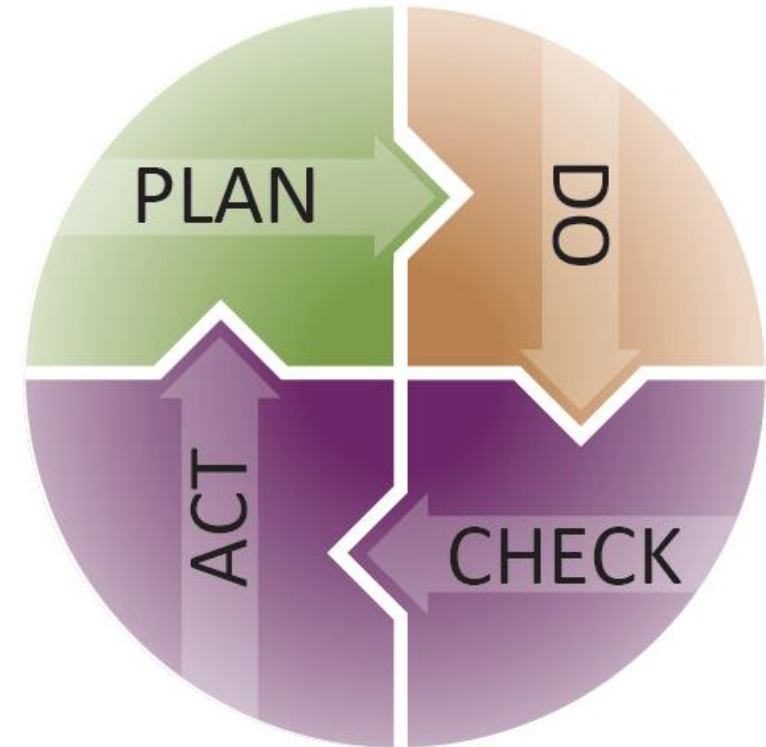
Ongoing reporting to Affected Communities

- ✓ Share progress on actions agreed with them
- ✓ Share results from monitoring reports (e.g. water quality)
- ✓ Share information on activities that could impact them and how are you mitigating them
- ✓ Share information on priorities identified by Affected Communities (e.g. number of workers employed from the community)
- ✓ Utilize locally appropriate channels (e.g. radio, meetings, posters)
- ✓ Local language and clear format
- ✓ Regularly
- ✓ Proactive, not reactive

Monitoring and Review

- ✓ Monitoring is the CHECK of the PDCA cycle
- ✓ Review is the ACT of the PDCA cycle

Monitoring and Review must drive **continual improvement**



Monitoring and Review

- ✓ Monitor implementation and effectiveness of plans.
- ✓ Trained personnel responsible for collecting and analyzing data.
- ✓ Indicators in line with E&S risks.

Techniques of monitoring:

- ✓ Measurement and testing (with calibrated equipment)
- ✓ Review of records and documentation
- ✓ Surveys and interviews
- ✓ Observation



Monitoring and Review – EHS inspections

- ✓ Daily and weekly EHS inspections – both by contractors and sponsor.
- ✓ Intensity of inspections in line with level of risk.
- ✓ Use of phone Apps to expediate inspections, analysis of data, and closure of non-compliances.
- ✓ Analyze data to plan targeted trainings and implement preventive measures.



INSPEÇÃO DE CAMPO

* Tipologia de Risco
MEIO AMBIENTE

* Sub Tipologia de Risco
FICHA TÉCNICA DO PRODUTO

* Situação de Risco
PONTUAL
SISTÊMICO

* Ação Solicitada

* Evidência

Apagar



Hot Work



Work at height



Scaffolding



EPC



EPI



Digging



Housekeeping



Electrical Installation



Procedures



Signaling



Isolation



Machinery/ Equipments/
Vehicles



Environment



Cargo Handling



Drilling rig



Chemicals

9. Monitoring and Review

Process indicators

- ✓ Number of workers and community members that can explain the grievance mechanism
- ✓ Number of EHS inspections performed
- ✓ Number of workers that can explain the company's code of conduct
- ✓ Number of workers that can explain the OHS procedures

Performance indicators

- ✓ Open versus closed complaints
- ✓ Average number of days to close complaints
- ✓ Number of EHS deviations per hour of inspection
- ✓ Lost time injuries per million of hours worked

Monitoring and Review

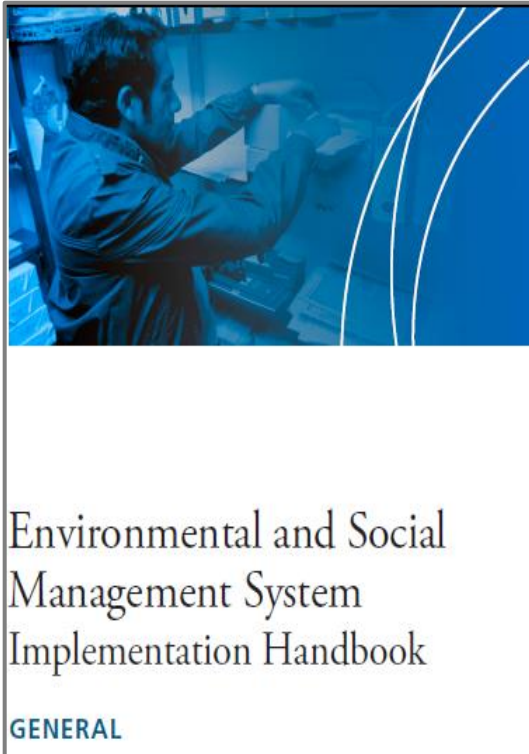
Management Review: Why is important?

- ✓ Keeps Senior Management up to date and engaged
- ✓ Accelerate decisions that must be made by Senior Management, such as capital expenditures
- ✓ Sends signal to employees that this is a top priority

No endorsement by Senior Management = **Failure**

- ✓ Must be frequent during construction – critical time / constant change.
- ✓ Present information in format that facilitates decisions by Senior Management
- ✓ Keep written records (minutes) of key topics discussed and decisions made in the meeting

ESMS Handbook



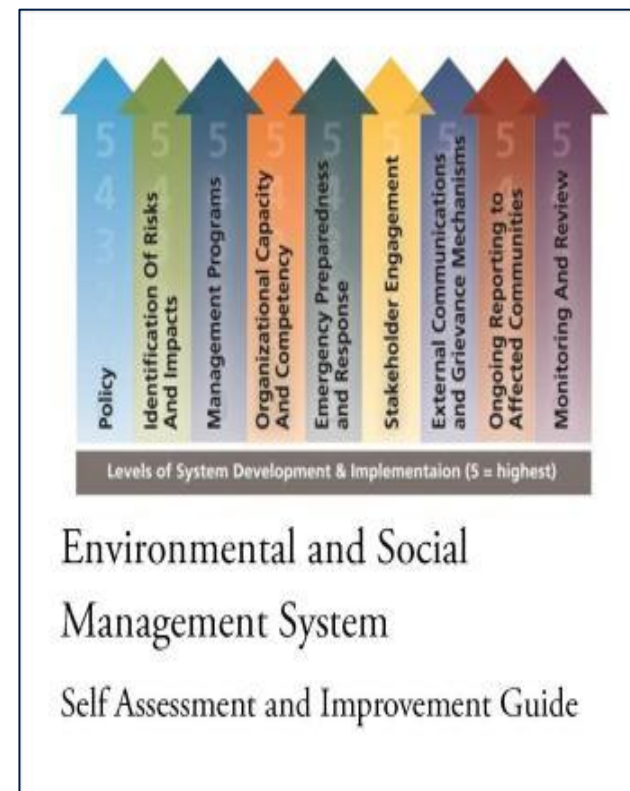
- ✓ Understand the benefits of an ESMS
- ✓ Learn the nine (9) elements of an IFC PS1 compliant ESMS
- ✓ Explains environmental, OHS, labor, and community risks and impacts in a simple, illustrative and concise language.

ESMS Self Assessment and Improvement Guide

MATURITY RATING

- 5 Mature system implemented internally and with key supply chain partners – continual improvement embedded in operations
- 4 Systems well developed and implemented internally – routine improvement projects
- 3 Systems approach adopted, but development and implementation is inconsistent – improvement sporadic
- 2 Limited system development with sporadic implementation – primarily reactive
- 1 Little systems awareness or repeatable processes
- 0 No systems awareness or repeatable processes

- ✓ Questionnaire to assess a company's ESMS maturity and parity with IFC PS 1 requirements.
- ✓ Tips to develop an ESMS improvement plan.
- ✓ Incorporated into Excel to expedite usage and analysis.



ESMS Toolkit



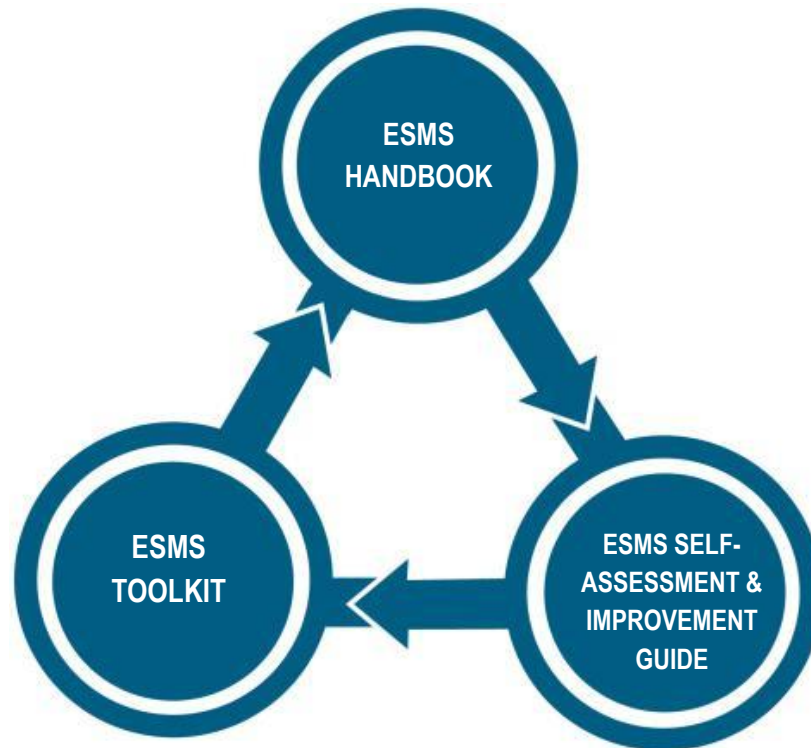
Environmental and Social
Management System

Toolkit

GENERAL

- ✓ Tools to strengthen weak or missing elements in client's existing ESMS
- ✓ Checklist
- ✓ Templates

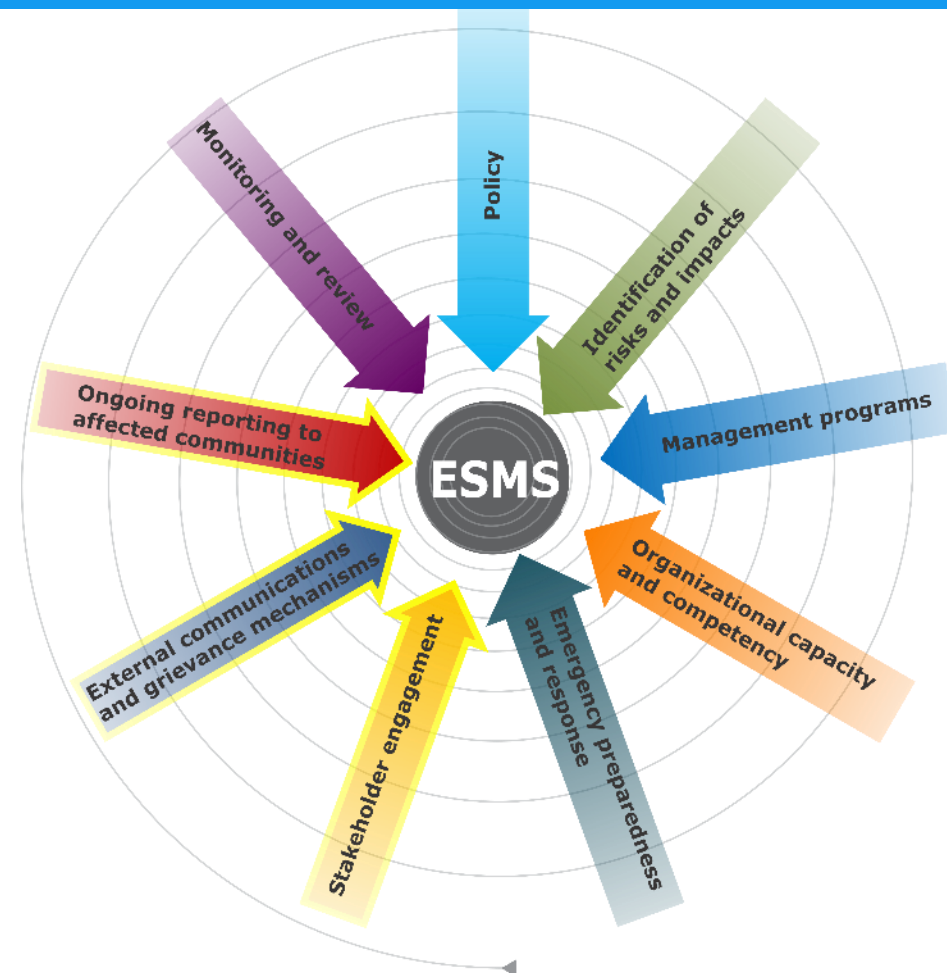
ESMS publications are available at [ifc.org/esms](https://www.ifc.org/esms)



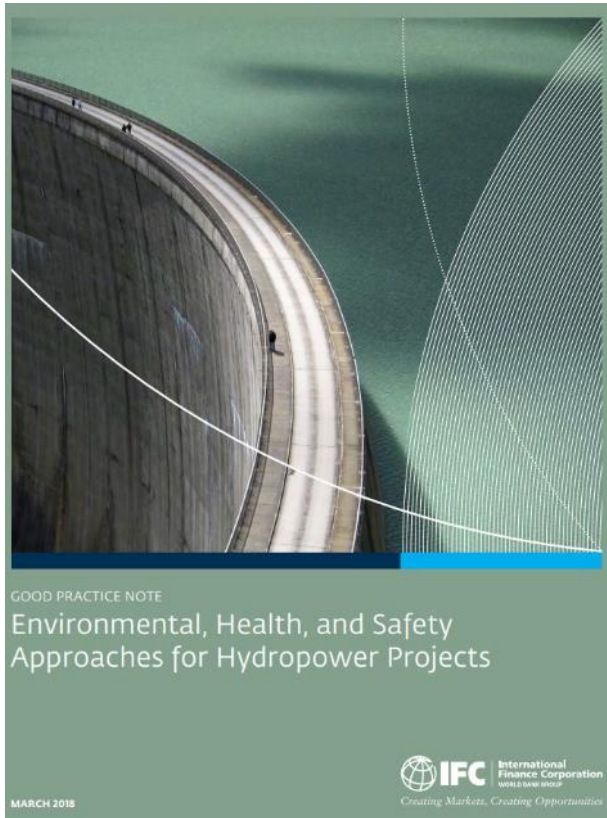
The implementation of an ESMS is mandatory for 100% of IFC investment projects

The nine (9) elements of a PS1 compliant ESMS

- ✓ There are hundreds of management systems standards with divergent objectives targeting different aspects of conducting business.
- ✓ IFC clients comply or are certified against different management systems and certification schemes, such as:
 - ✓ Quality: ISO 9001
 - ✓ Occupational Safety and Health: ISO 45001
 - ✓ Environmental Management: ISO 14001
- ✓ These systems must be enhanced to comply with PS1 requirements and its nine (9) ESMS elements.



Learn more at: ifc.org/sustainability & ifc.org/sustainabilitypublications



GOOD PRACTICE NOTE
Environmental, Health, and Safety Approaches for Hydropower Projects

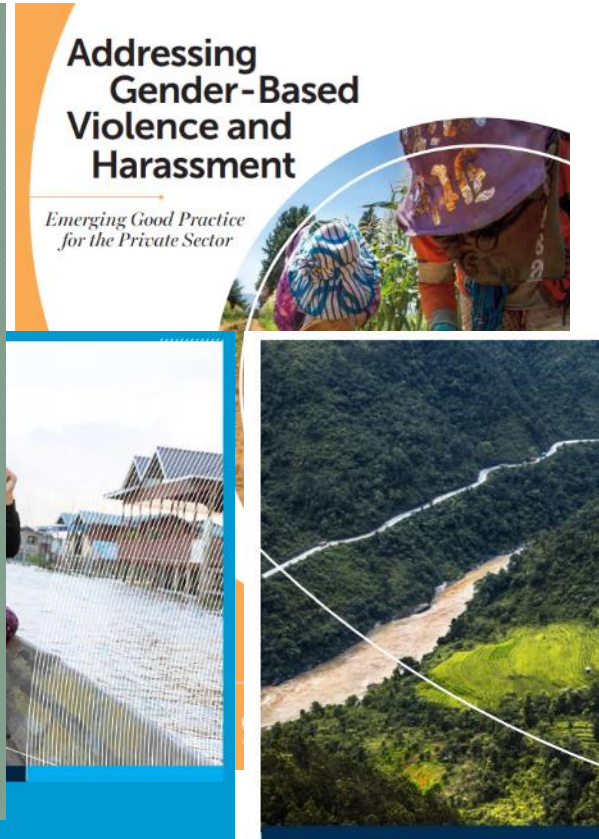
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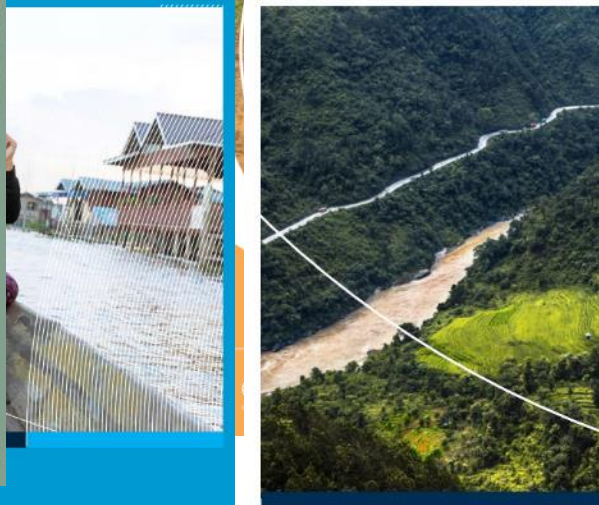


GOOD PRACTICE HANDBOOK
Environmental Flows for Hydropower Projects
Guidance for the Private Sector in Emerging Markets



WORLD BANK GROUP
THE WORLD BANK IFC MIGA



Addressing Gender-Based Violence and Harassment
Emerging Good Practice for the Private Sector



Powered by Women
Business Case for Gender Diversity and Equality in Nepal's Hydropower Sector

IN PARTNERSHIP WITH
Australian Aid  



Cumulative Impact Assessment and Management:
HYDROPOWER DEVELOPMENT IN THE TRISHULI RIVER BASIN, NEPAL

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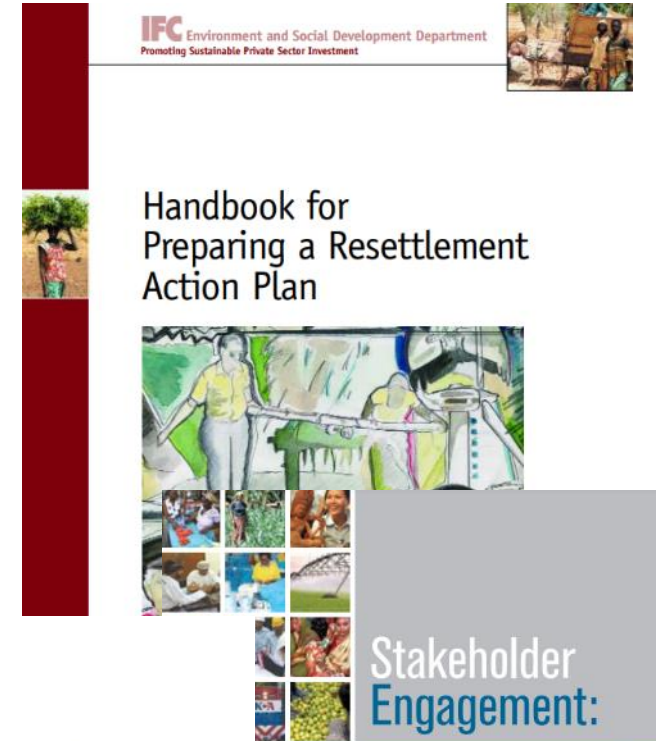
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Good Practice Note
Addressing Grievances from Project-Affected Communities


GUIDANCE FOR PROJECTS AND COMPANIES ON DESIGNING GRIEVANCE MECHANISMS

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IFC Environment and Social Development Department
Promoting Sustainable Private Sector Investment

Handbook for Preparing a Resettlement Action Plan



Stakeholder Engagement:
A Good Practice Handbook for Companies Doing Business in Emerging Markets

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