



Environmental and Social Management System Implementation Handbook

METAL PRODUCTS MANUFACTURING

Although the environmental and social management system described in this Handbook is based on IFC Performance Standard 1, the process outlined herein may not provide for meeting all the requirements of IFC Performance Standard 1, or any other IFC Performance Standard. The purpose of this Handbook is to demonstrate a technical means of integrating environmental and social concerns into company management, so that a business can become more effective in reducing its impact on the environment, its workers and its neighboring communities.

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Welcome & How to Use This Handbook

Environmental and social responsibility is becoming more and more important in today's global economy. There are thousands of environmental and social codes and standards in the world today. The codes and standards define the rules and the objectives. But the challenge is in the implementation. An environmental and social management system (ESMS) helps companies to integrate the rules and objectives into core business operations, through a set of clearly defined, repeatable processes.

This Handbook is intended to be a practical guide to help companies develop and implement an environmental and social management system, which should help to improve overall operations.

In the current economic climate, companies are under pressure to perform or even just survive. New initiatives are often met with resistance as people struggle to keep up with their day-to-day responsibilities. Some people think that an environmental and social management system must be big, complicated and expensive. But that is not really true. To be effective, a management system needs to be scaled to the nature and size of the company.

If a company has existing management systems for quality or health and safety, this Handbook will help to expand them to include environmental and social performance. Our hope is that this Handbook will accelerate a company's journey of continual improvement, for its own benefit and that of its employees and stakeholders.

Quick Reference for Using this Handbook	
Sections I – II	These sections provide background on environmental and social management systems (ESMS).
Section III	This section provides step-by-step instructions on how to develop and implement an ESMS. If you see a Toolkit icon, it means that there is an accompanying tool in the ESMS Toolkit.
ESMS Toolkit	This companion publication gives tools, including forms, templates, checklists, and other useful documents, to help you develop and implement the systems described in the Handbook. We suggest that you adapt each tool for your company.
ESMS Self-Assessment and Improvement Guide	This companion publication contains a questionnaire, maturity matrix, and improvement tips to help you measure the maturity of your ESMS and develop a plan for improvement.

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Benefits of an Environmental and Social Management System

“Environmental and social management systems are our framework for managing compliance and achieving continual improvement within our company.”

CSR Officer
Multi-national iron company

Benefits of an Environmental and Social Management System in the Metal Products Manufacturing Industry

Today, metal products manufacturing companies are confronted with a number of significant environmental and social challenges. None of the challenges is insurmountable, but if not effectively assessed and managed, they will hurt your profitability, reputation, and prospects for future business.

Among these challenges are increasing energy and raw materials costs, the growing power and influence of environmental and labor regulatory agencies and rapidly evolving consumer awareness and concerns about environmental and social issues. These risks are in addition to the primary risk of failing to deliver high-quality metal products on time and build brand and consumer confidence. All of these risks ultimately have financial consequences. Moreover, exports and international exposure are vital to the success of many metal products manufacturing businesses; but exporting your products also increases demands from international legislation, local industry standards, and consumer requirements. Many of these requirements are increasingly related to environmental and social practices. All of these risks, requirements and pressures on your business are driving forces that should motivate you to implement a

“We are facing intense global competition in the current economic climate. Improving our environmental and social management helps us reduce inputs, minimize waste, and improve our competitiveness and profitability.”

Senior VP
Multi-National Producer

“For our company, socially and environmentally responsible management is not only an ethical obligation; it is also a tool that enables us to obtain and maintain competitiveness and pursue innovation in our field.”

CEO - Industrial Manufacturer

management system. A management system will enable you to consistently foresee and address issues confronting your business so you can prevent potential risks from becoming actual problems.

Implementing an environmental and social management system (ESMS) can have direct business benefits. Conserving and using energy and materials more efficiently helps to reduce production costs. Reducing waste and discharges and increase recycling can minimize costs of waste disposal, which have been steadily increasing over time. A management system can help you benchmark your expenditures against industry standards and identify potential production and operational cost savings.

The same tangible benefits can be realized on the social side. Clear, transparent human resource policies and procedures improve communication between workers and managers. This helps to anticipate and avoid labor problems. Effective occupational health and safety management procedures will enable you to identify workplace and process hazards so you can eliminate or reduce their potential negative impacts through controls and employee training on

“Social compliance is a tough dilemma to begin with. Resolving it takes a systematic approach to each and every issue.”

Managing Director

Multi-national Steel Company

the avoidance of risks. This can not only reduce near misses, accidents and fatalities, but can also lead to bottom-line business benefits such as reduced absenteeism and worker turnover, and lower insurance premiums for workers' compensation.

Many companies already use management systems for quality control and occupational health and safety. An environmental and social management system (ESMS) simply extends that approach to the management of your business's impact on the environment, your workers and other external stakeholders.

Ultimately, your management systems should be integrated and centralized in one comprehensive system, instead of having separate systems for quality, occupational health and safety, and the environment. This handbook will help you implement an integrated ESMS that is appropriate for the size and nature of your company.



Understanding an Environmental and Social Management System

Understanding an Environmental and Social Management System

OVERVIEW

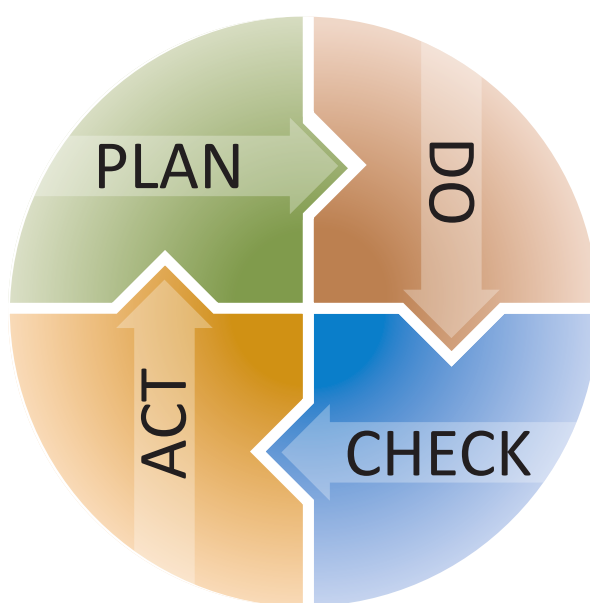
A management system is a set of processes and practices to consistently implement your company's policies to meet your business objectives. The goal is to make sure that you have the appropriate policies and procedures in place and that people consistently follow them. The management system helps to assess and control your risks and is the key to lasting improvement. A key feature is the idea of continual improvement – an ongoing process of reviewing, correcting and improving your system. The most common method is the Plan-Do-Check-Act cycle (PDCA), described below.

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?

In the workplace, an effective management system is comprised of trained, committed people routinely following procedures.

ELEMENTS OF AN ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM (ESMS)

A solid, functioning environmental and social management system (ESMS) is made up of interrelated parts. Take a look at the nine elements of an effective ESMS. Each of these elements is important, because they help you to assess, control and continually improve your environmental and social performance, as part of the Plan-Do-Check-Act cycle. The following section presents step-by-step instructions on how to develop and implement a system using these elements.

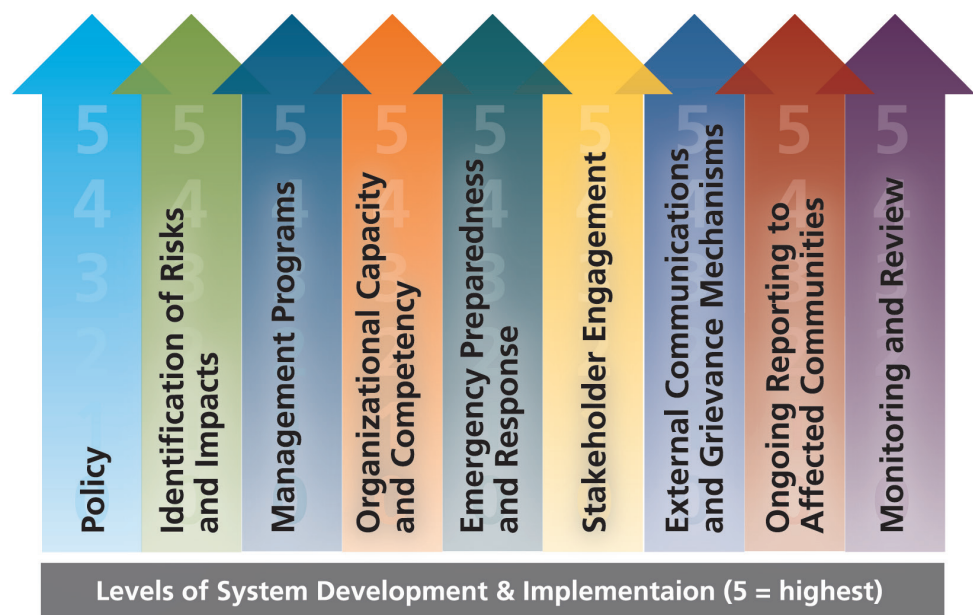


MEASURING AND IMPROVING

You can't improve what you don't measure.

A lot of companies in the metal manufacturing industry already have management systems for quality. If so, you may already have elements of an ESMS, and there is no need to replace what you already have. In this Handbook's companion publication, ESMS Self-Assessment and Improvement Guide, we provide a self-assessment rating for each of the ESMS elements. The self-assessment will allow you to measure your current level of system development and implementation. You will answer a series of questions and get your score for each element in the ESMS on a scale of 0 to 5 (5 is highest). The score measures the maturity of your system. Once you understand the maturity of your system, it is easier to target specific steps you can take to improve it.

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



REMEMBER

A carefully developed, detailed ESMS is only valuable if it is well-implemented.

SYSTEM DEVELOPMENT AND SYSTEM IMPLEMENTATION

One of the most important things to understand about a management system is the difference between system development and system implementation. A management system is comprised of trained, committed people routinely following procedures. If you break this statement down, you see that it talks about “procedures.” Procedures are the step-by-step way that people follow your policies. Procedures are the heart of effective system development.

Now let’s look at the other part of the statement – “trained, committed people routinely following procedures.” This is the implementation. There is a lot that goes into making it happen. Of course, some training is important to make sure that people are aware of the procedures and understand what they are supposed to do on a routine basis. But you also need to find a way to get their commitment.

One common observation is that large companies tend to be better at system development. But they often have difficulty getting people in different locations or departments to consistently implement the procedures, despite having well-documented systems. Small companies tend to be better at system implementation – if they have effective leadership. However, they are often weak at developing the documentation needed to ensure continuity when people in the organization change.

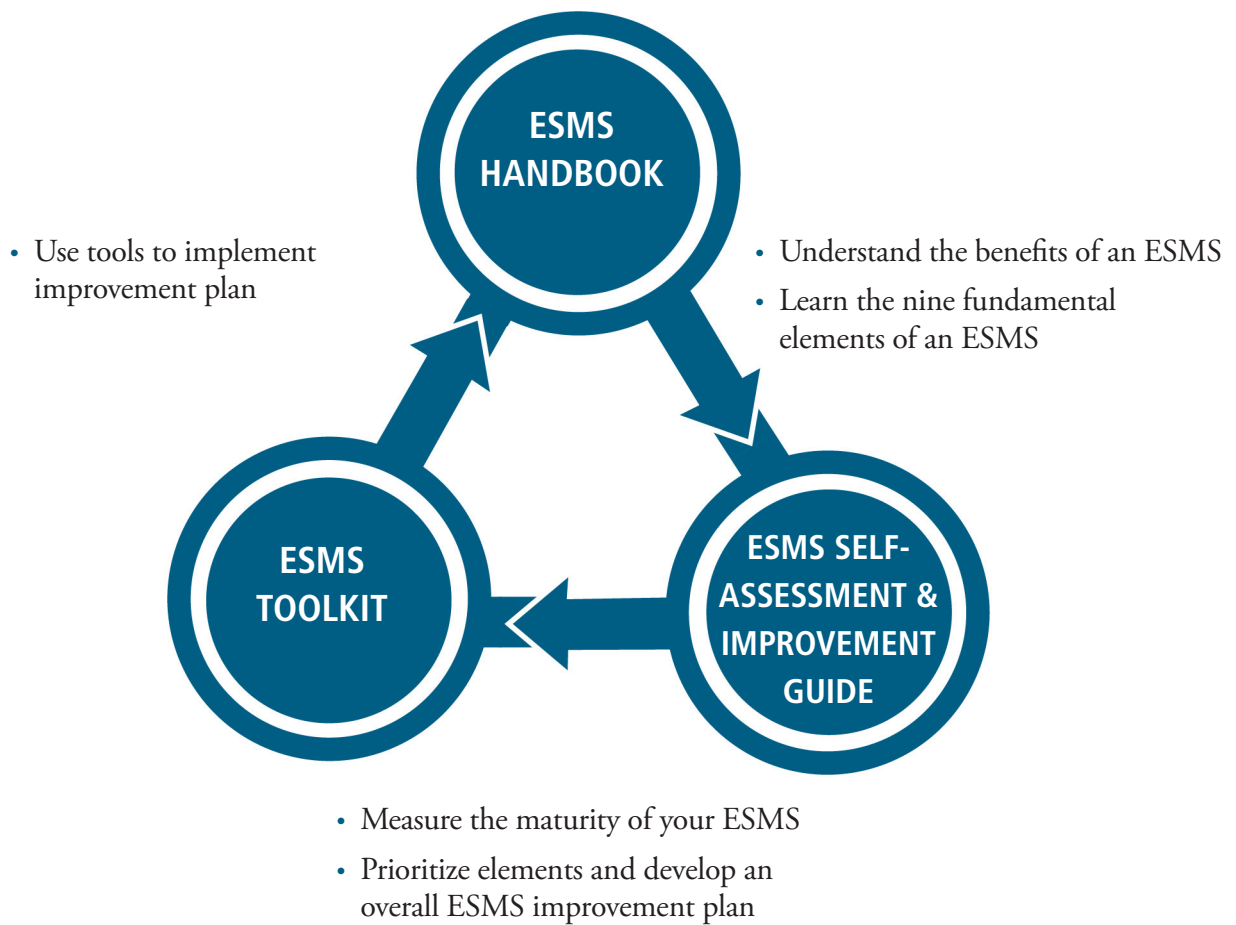
The approach of this Handbook and its companion publications, the Toolkit and Self-Assessment and Improvement Guide, balances system development and system implementation in each of the ESMS elements.

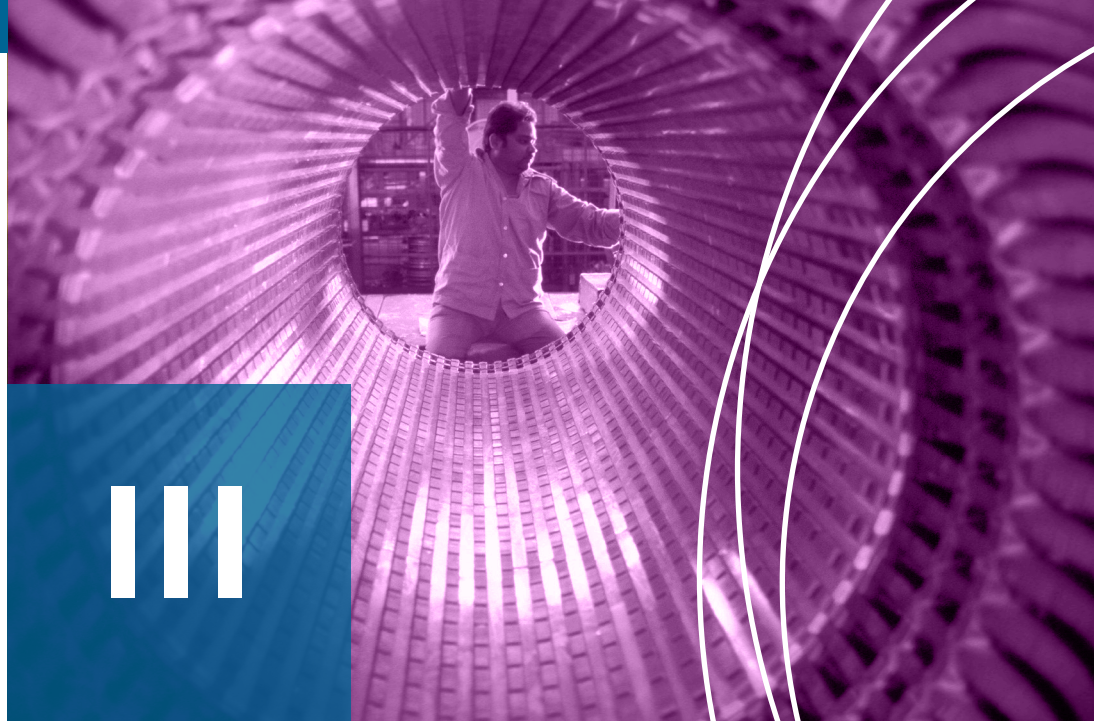
DEFINITIONS	
System Development	The documented policies and procedures.
System Implementation	Trained, committed people routinely following the procedures.

An ESMS does not need to be complicated, but it does need to be documented and then put into practice. Some people mistakenly think a management system is just documents. But that is only a part of it. Management systems are about implementation and continual improvement.

USING THE HANDBOOK AND COMPANION PUBLICATIONS TO DEVELOP AND IMPLEMENT YOUR ESMS

The Handbook and companion publications are designed to help you measure and improve the maturity rating of your ESMS. The flowchart below shows how you can use these three publications in a cycle of continual improvement.





Practical Guidelines for Developing and Implementing Your Environmental and Social Management System

This section provides step-by-step instructions on how to develop and implement an ESMS.

For each element of the ESMS, we offer a quick way to measure where you are now.



When you find a toolkit icon, it means there is a tool in the companion publication *Toolkit* to make it easier to get started.

Policy

5

E&S policies and procedures clearly communicated internally and externally. Senior management commitment to continual improvement.

4

Full set of E&S policies, procedures and records, centrally maintained and routinely reviewed. Wide awareness in company.

3

Policies and procedures in place meeting selected E&S standards. Sporadic communication, implementation and review.

2

Policies in place meeting selected E&S standards. Sporadic, conflicting or confusing procedures.

1

Limited E&S policies in place.

0

No E&S standards adopted. No related policies and procedures.

The cornerstone of your ESMS is your set of policies. Your policies summarize the commitment that your company has made to managing environmental and social risks and impacts. They establish the expectations for conduct in all related aspects of your business.

PURPOSE OF AN EFFECTIVE POLICY

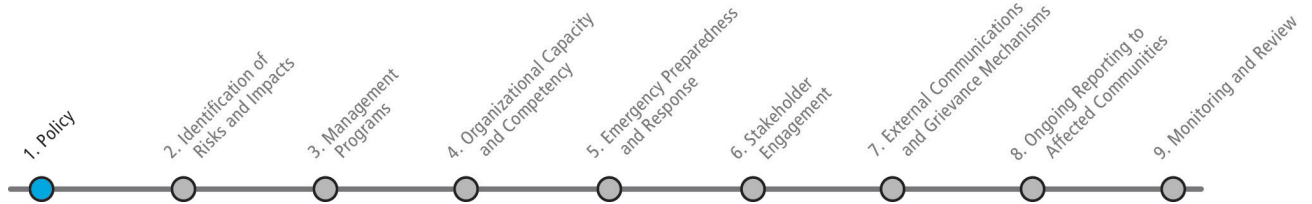
Simply put, the policies are the rules. They tell everyone what is allowed and what is not allowed when it comes to social and environmental issues such as labor and working conditions, resource efficiency and pollution prevention, and community health, safety and security.

A good practice for writing the policies and making them understood is a Policy Statement. The Policy Statement communicates your company's policies to your management, staff, board, suppliers, contractors, customers and all other stakeholders. It is important for everyone to have a common understanding of the core values of the company, how you expect people to behave and how external stakeholders can expect you to operate.

MODIFYING YOUR EXISTING POLICY STATEMENT OR CREATING A NEW ONE

The Policy Statement should be clear and simple – it does not need to be long and technical like a legal document. Many companies already have a corporate code of conduct that serves as a Policy Statement and includes issues such as ethics. You can expand your existing code to align with internationally recognized environmental and social standards for issues relevant to your business, such as the IFC Performance Standards for Environmental and Social Sustainability.

It is important to think through the creation of the Policy Statement and tailor it to your company operations. In developing your Policy Statement, be aware of the specific risks you face in the metal products manufacturing industry.



GAINING SENIOR MANAGEMENT AND COMPANY COMMITMENT

Modifying or adopting your Policy Statement will require senior management support. In some companies, it may require approval from the Board of Directors. A high level of senior management support is critical for integrating environmental and social commitment throughout all levels of your company.

Committing to environmental and social policies probably requires some change in the behavior of your company, workers, contractors and suppliers. This can be challenging. There are different strategies and different techniques for changing organizational behavior, but experts agree that to create lasting change, senior management must be committed to the effort.

The first step is building awareness. There are many issues that occupy your employees' attention day-to-day. As just a written document, your Policy Statement may not get their attention or seem relevant to their daily activities. Senior management needs to make this Policy Statement come alive.

To do so, they need to communicate the importance of environmental and social issues, by making them an ongoing part of high-level Board and management discussions, public speeches, and messages to employees.

Once people are aware of the Policy Statement, the next step is building commitment – also known as “buy-in.” You will probably meet resistance: “Why do we need to do this? It is too much work. I’ve already got enough to do. How does this help our bottom-line?” Senior management needs to effectively shape and communicate the message internally and externally. They need to send a clear message that this is a long-term commitment by the company.



Use the Toolkit item **Checklist for Developing a Company Policy Statement** to get ideas of what you could include in your policy.

The key message is that this will contribute to the company's success and that each person will benefit - but that they will also be held accountable.

Once you have convinced people that they need to do something, senior management needs to drive implementation. They do not need to lead the effort on a day-to-day operational level, but they do need to adopt the policy and oversee the implementation plan. Resources will be necessary in order to communicate the policy internally and externally, integrate new procedures and train all relevant staff and suppliers.

Crafting the initial messages can be a good time to talk through the above



Use the Toolkit item **CEO Letter Announcing the ESMS - Internal** to get started.

stages with your senior management. Consider accompanying the Policy Statements with a message from the CEO.

For any change initiative, think of three critical stages:
Awareness;
Commitment;
and
Implementation.

Your senior management can help you to accelerate all three stages.

Identification of Risks and Impacts

The primary objective of a risk assessment is to identify the potential negative environmental and social impacts so that you can develop the appropriate strategies to address them.

In the following pages, we present the key issues that come up in the metal products manufacturing industry.

KEY RISKS AND IMPACTS IN THE METAL PRODUCTS MANUFACTURING INDUSTRY

1. Environmental: Pollution Prevention and Resource Efficiency

- Release of hazardous air pollutants such as hexavalent chromium, manganese, nickel, and other metals and metal oxides from welding and thermal cutting processes
- Release of volatile organic compounds (VOCs) and solvent vapors containing ammonia and ammonium chloride from metal degreasing, cleaning, and painting processes
- Generation of liquid waste from wet scrubbing used for air emissions control, spent metal working fluids, spent quenching baths, spent degreasing and cleaning solvents, and spent surface finishing baths
- Generation of large amounts of sludge from wastewater treatment, and metal surface cleaning and finishing processes (e.g. coating, galvanizing, electroplating)
- Generation of solid waste from welding and thermal cutting
- Non-recycling of metal dust or scrap from metal forming, cutting, or grinding processes; and, dust collected from air pollution control devices
- Improper disposal of empty paint containers
- High water consumption in water-cooling and washing processes
- High energy consumption, especially fuel oil, engine oil and petrol, for metal forming and cutting equipment, as well as by forklifts or cranes used to transport materials within the factory
- Improper disposal of batteries used for diesel generators

5

Mature system, routinely reviewed and updated as part of a continual improvement plan. Internal and external inputs. Procedures extended to contractors, subcontractors, third parties and supply chain as relevant.

4

Systematic, documented identification and prioritization of E&S risks and impacts. Routinely reviewed and updated across existing, new and changing activities. Wide awareness and engagement in company.

3

Awareness and engagement of staff in identification and prioritization of E&S risks and impacts. External experts involved as required.

2

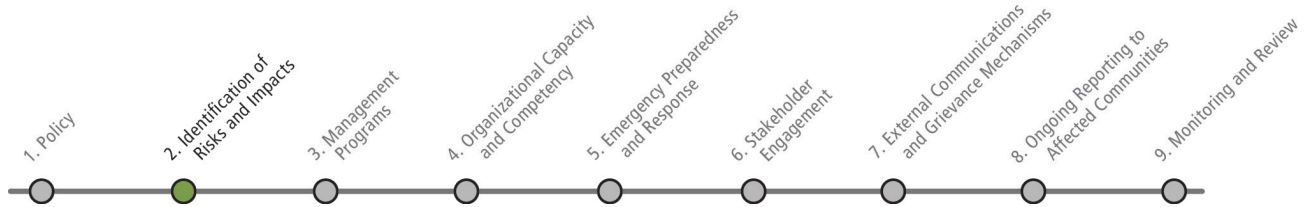
Procedures in place for identification of E&S risks and impacts across all key activities.

1

Basic identification and assessment of E&S risks and impacts, but limited to a few activities.

0

No identification or assessment of E&S risks and impacts.



2. Occupational Health and Safety

- Injuries such as crushed limbs and digits from hydraulic forming presses, metal working punches, drill presses, and other metal forming tools and machines
- Cuts, abrasions, and puncture wounds from metal cutting tools and machines
- Eye and soft tissue injuries from flying metallic particles
- Exposure to metallic fumes, metal dust, phosgene gas, and VOCs resulting in metal fume fever and other respiratory and Central Nervous System (CNS) illnesses
- Respiratory and dermal exposure to toxic and carcinogenic metals, metal working fluids, chlorinated and non-chlorinated metal cleaning solvents, priming and painting compounds
- Exposure to extreme temperatures and unsafe levels of noise
- Exposure to radiation from welding and non-invasive testing (e.g. x-ray stations for continuous monitoring of product quality)
- Accidental collision with moving items, cranes and forklifts
- Injuries due to falling objects from heights, or workers falling from heights

3. Labor

- Stigmatization and fragmentation of labor unions
- Lack of social security or government entitlements for contract workers
- Exclusion of contract workers from worker unions
- Failure to provide accident/injury compensation per law for contract workers
- Lack of adequate training on use of PPE, especially amongst contract workers
- Lack of proper facilities, such as canteen, clean drinking water, hygienic storage of food, which can affect hygiene and health of workers
- Excessive overtime not properly compensated or unrealistic production quotas
- Failure to compensate at minimum wage or insufficient wages to achieve a reasonable standard of living
- Use of child labor

4. Community Health, Safety and Security

- Ground or surface water contamination due to improper management of wastewater and liquid wastes
- Exposure to hazardous materials and hazardous waste due to improper transport and disposal
- Exposure to air emissions from various metal production processes
- Use of private security personnel leading to risk of violence against community members
- Increased vehicle traffic due to the transport of raw materials and finished products to/from the factories
- Dangers from industrial fires or accidents, including the release of harmful substances and chemical spills

Top 3 risks and opportunities in the Metal Products Manufacturing Industry

1 There is a high risk of accidents and severe injuries in the industry. The types of processes, chemicals, and machines used in metal production create an environment where personal protective equipment and proper safety practices are essential. The lack of investment in personal protective equipment – both financially and in terms of training time for workers – can have serious implications for workers' health and safety.

2 Fire and explosion hazards from combustible metal dust, combined with ineffective emergency planning, can have disastrous impacts on workers and businesses in the industry. Safety planning and frequent training are required to prevent fires from occurring and prepare workers to respond to any emergency that may arise.

3 Solid and liquid waste from metal cleaning and finishing processes may contain toxic and carcinogenic substances that can contaminate areas surrounding facilities. Air emissions containing metals and volatile organic compounds (VOCs) can also contribute to environmental pollution. The use of pollution prevention methods and proper waste treatment and disposal can reduce negative impacts to the environment and decrease health risks from contaminated air, soil and water.

The following are key considerations for a robust risk assessment system:

- Cover environmental, OHS, labor and community risks;
- Conduct at regular intervals – at least once a year;
- Conduct any time there are significant changes to operations;
- Conduct any time there are external changes such as new laws or regulations;
- Include input from all levels of workers and managers;
- Include input from affected communities and other external stakeholders;
- Use external consultants and experts if your staff does not have the capability;
- Assess and prioritize risks according to both the severity and probability of negative impacts;
- Consider risks in your supply chain in addition to those in your company; and
- Scale as appropriate to the size and complexity of your business.



Now that you have an understanding of the typical risks in the metal products manufacturing industry, you can first use the **Risk Identification Worksheet** to identify your potential risks and negative impacts based on your operations and operating environment. Then you can use the **Process Mapping** or the **Physical Mapping** tools to identify in more detail where problems are likely to arise within your production process.

Often it is not possible or practical for you to deal with every single environmental and social impact that your company could possibly have. You can use the **Risk Assessment Form** to prioritize which risks should be addressed first.

For more information on environmental, OHS and community risks and impacts in your industry, consult the *WBG EHS Guidelines* at www.ifc.org/sustainability.

Management Programs

Management Programs are centered on Action Plans and improved procedures to avoid, minimize or compensate for the risks and impacts that were identified.

For example, if you have a policy commitment to avoid discrimination in the workplace and you have identified this as a risk factor based on the lack of a system for employees to express their complaints, you may implement a complaint procedure as a way to minimize the risk of discrimination. Or, if one of your policy objectives is the reduction of hazardous waste and you have identified this as a risk factor because of the high percentage of chemical waste produced in your plant, you may take action by using fewer hazardous chemicals.

5
Verified progress against objectives and targets; significant improvements in E&S performance. Demonstrated commitment to continual improvement using annual improvement plans.

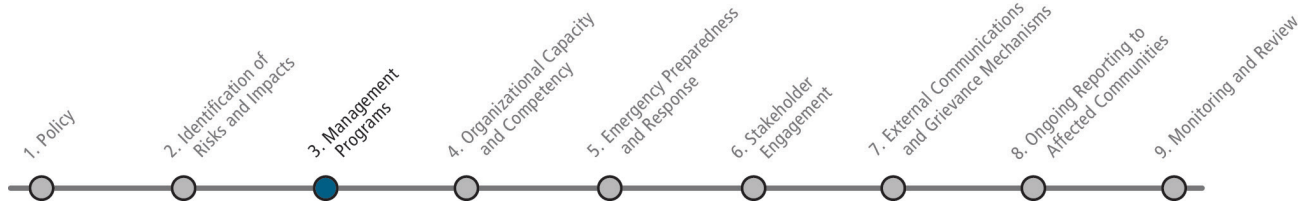
4
Routine, consistent implementation of actions/activities to proactively manage E&S risks and impacts. Measurable company-wide objectives and targets. Periodic review and update.

3
Actions/activities in place to manage E&S risks and impacts, following the mitigation hierarchy – avoid, minimize, offset/compensate. Proactive approach to managing issues.

2
Procedures and assigned responsibilities to address and mitigate E&S risks and impacts across all key activities. Primarily reactive.

1
A few informal programs or activities to mitigate E&S impacts. No systems awareness or repeatable processes

0
No process for mitigating E&S risks and impacts.

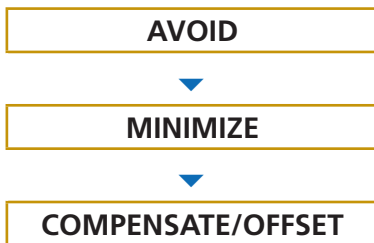


IDENTIFYING PREVENTIVE AND CORRECTIVE ACTIONS

It is good practice to emphasize preventive and proactive actions: (1) try to avoid causing social or environmental damage; (2) if not possible, then minimize the impact; (3) if not possible, then compensate or offset the damage.

First, attempt to take actions to avoid or prevent the negative impacts. For example, suppose you are expanding operations and have identified potable water as a key risk. You might change your new facility location or design it differently, so that you avoid contamination of groundwater close to homeowners and communities. Or, suppose you have identified a certain process that exposes workers to toxic chemicals and pollutes the local river system. You might change your manufacturing processes to avoid using these chemicals.

Prioritizing Your Actions



In many cases, complete avoidance is not possible – you may not be able to relocate or find alternative processes or materials. In these cases, you should try to minimize the impact. For example, suppose that you are located in an area where women are traditionally given lower status and less access to education, and in the workplace they are often mistreated by male co-workers and supervisors. Given this cultural context, it is important to be clear in your recruitment, hiring and training procedures, in order to make sure that women are hired on equitable terms and given equal access to training and promotion opportunities. You can also develop non-discrimination procedures to ensure that rules for recruitment, hiring and training are clear for everyone to follow. Additionally, you can conduct training to make sure that everyone is aware of and follows the procedures.

In some cases, it may not be possible to completely avoid or minimize certain negative impacts. Then you should find ways to offset them with comparable positive impacts or provide compensation to those impacted. For example, suppose your operation uses a large amount of water. Despite taking action to minimize water consumption, there are still periods of the year when water becomes scarce in the local community. You might collaborate with community leaders to dig new wells or provide alternate sources of drinking water.

WRITING AN EFFECTIVE ACTION PLAN

Whatever actions you decide to take, think of them as a continual improvement process - you will need to set targets, set deadlines, measure the results, and adjust the plans if necessary. You need to assign responsibilities and start to involve the right internal people and departments.

As you develop your Action Plans, these are the key questions that you need to think about:

- **What** – environmental and social risks you want to address
- **How** – related actions and procedures to be implemented to address the risk
- **Why** – reasons (objectives) for the actions and procedures, and the expected results (targets)
- **When** – timeframe and deadlines
- **Who** – responsible people



Use the Toolkit item **Action Plan Chart** to get started.

The above examples address some of the risks highlighted in the metal products manufacturing industry. These are just some of the actions that might be taken. You can adapt them to your situation and add as needed – be flexible to meet your company's specific situation. As you tailor your action plans, consult with your workers and managers, experts and external stakeholders, including your suppliers and community. They can offer insight into important issues and effective actions. They can also help you obtain commitment for plans you are trying to implement, and provide candid feedback about how well the plans are working. This will be critical to the continual improvement of your systems.

For recommendations on how to address environmental, OHS and community risks and impacts in your industry, consult the *WBG EHS Guidelines* at www.ifc.org/sustainability.

WRITING AN EFFECTIVE PROCEDURE

Procedures serve as step-by-step instructions for workers, supervisors and managers. They allow for everyone to have a common understanding of how to behave. They enable the rules to be followed even when there is staff turnover. Clear, detailed procedures help to embed your social and environmental policies into your daily operations.

It is a good practice to document your procedures. The key is to make your procedures as clear and as brief as possible. You can use text, checklists, flowcharts, or simple illustrations. The format for your procedure can vary depending on the audience. A written procedure may be more appropriate for managers and supervisors, while illustrations may be useful when dealing with less literate or immigrant workers. Keep your procedure as short and simple as possible.



Use the Toolkit item **Outline of Procedure** and the **Sample Procedure Flowchart** to get started.

Simply documenting a procedure is not enough. Effective implementation is the ultimate goal. Most importantly, employees need to be aware that a new procedure exists and understand why it is important to follow. They need the skills and knowledge to be able to implement it. This is achieved through routine communication and effective training. You will learn more about this in the next chapter, Organizational Capacity and Competency.

Finally, you must ensure that your employees have access to the current version of each procedure. Out-of-date documentation should be removed or clearly marked as outdated to ensure that no one unintentionally follows the old procedure.

SHORT CASES

Here we present several short cases that illustrate some of the actions that companies can take to avoid, minimize or offset/compensate common environmental and social key risks in the metal products manufacturing industry. Action Plans can be scaled to the size of your company and the nature of the risks you face.

Electroplating Plant

RISK: Improper disposal and treatment of wastewater and hazardous waste

Quality Electroplating is a small independent electroplating company based in Lima, Peru. A recent article published by a local environmental NGO has raised concerns about the pollution from the small informal electroplating industry in the country, and specifically identified Quality Electroplating for its poor practices. Because the company is small and located in a mostly commercial area, it has been struggling to afford the costs of wastewater treatment. The company has been part of the steady growth of poorly monitored independent, small- to medium-scale electroplating units. The article claims that they are contributing to soil and groundwater pollution in the city and highlights rising concerns about processes that use highly toxic or carcinogenic materials that are difficult to destroy, stabilize and dispose of in an environmentally sound way. Some of these processes include hexavalent chromium, cadmium, and cyanide-based plating. The company has received increasing numbers of complaints from local community members and has decided to review its practices to address the issue.

IMPACT
<ul style="list-style-type: none"> Contamination of soil and water sources
AVOID
<ul style="list-style-type: none"> Assign pollution prevention responsibilities and authority to properly trained individual(s) to analyze, evaluate and implement pollution prevention methods, such as: <ul style="list-style-type: none"> Replace hexavalent chromium, cadmium, and cyanide-based plating processes Recycle and extend the life of process baths (spent baths should be sent for recovery of plating chemicals and not discharged into wastewater treatment units) Reduce the use of rinse waters (e.g. reduce drag-out) Minimize and recycle metal sludge from spent baths and wastewater treatment plants
MINIMIZE
<ul style="list-style-type: none"> Develop and implement policies and procedures for the proper segregation, treatment and disposal of hazardous wastes generated from the electroplating processes Regularly train workers on the proper labeling, handling and storage of chemicals and hazardous wastes Explore the possibility of sharing a common wastewater treatment plant with other small electroplating facilities. Wastewater must be pretreated to ensure cyanide destruction and conversion of hexavalent chromium into trivalent chromium
OFFSET
<ul style="list-style-type: none"> Assist in the remediation of contaminated community sites and water supplies

Metal Fabrication

RISK: High Energy Consumption

SBD Metal Fabrication is a small sheet metal manufacturer in Pakistan that produces chemical handling fume cabinets and hoods. The factory operates as many hours as possible each day in order to maximize the use of its machinery, such as sandblasters and ovens for powder coated metal. Production has often been halted due to electricity blackouts, so the company usually leaves the machines on overnight so that they can be used whenever electricity becomes available. The company recently purchased a generator to ensure that it can continue its production during the blackouts, but the cost of fuel is more than expected due to the increasing number of blackouts. The percentage of total production costs spent on energy increased 30%. This is unsustainable for the company, so the owner has instructed the managers to look into alternatives to cut energy costs and decrease consumption.

IMPACT

- Emission of greenhouse gases
- Increased air emissions

AVOID

- Measure energy use per process and machine to benchmark use against industry standards and identify inefficiencies.
- Replace old and outdated machines with energy efficient technology.
- Identify and implement opportunities for heat recovery (e.g. exhaust heat from curing ovens).
- Install a voltage optimization system to prevent overvoltage or undervoltage.
- Invest in renewable energy sources.

MINIMIZE

- Implement an energy conservation awareness and training program for workers, supervisors and area managers. Train workers to switch off machines and lights when not in use.
- Insulate ovens to prevent heat waste.
- Examine wiring and replace or repair damaged wires so they do not leak electricity.
- Retrofit facility lighting and install energy efficient lighting, timer switches, daylight sensors and motion-activated lighting.
- Implement a program for regular maintenance, in order to improve the energy efficiency of equipment.
- Review and revise production schedules so that high energy consuming equipment is used efficiently (e.g. batch operation to reduce machine operation time). Schedule "rolling blackouts" with the local power generation authority to plan for blackout times.

Metal Stamping Company

RISK: Use of cleaning solvents containing hazardous chemicals

A metal stamping company in Indiana, USA is being investigated by local authorities for improper disposal of trichloroethylene (TCE) from its degreasing operations by local authorities. TCE is a halogenated volatile organic compound (VOC) widely used for cleaning processes in the industry since it evaporates quickly, is cost effective and can be used for many different types of metals. However, the Indiana Department of Environmental Management recently passed a mandate that companies must reduce their use of TCE due to its negative health impacts. TCE exposure through inhalation or ingestion of contaminated drinking water has been associated with central nervous system (CNS) symptoms such as dizziness, headaches and confusion, and can increase the risk of liver and kidney cancer. A recent inspection of the company detected the odor of TCE and found four degreasing machines using it. The company claimed that the machines were old and scheduled to be replaced over the next few months. Further inspection determined that the company was improperly disposing the spent TCE, leading to the probable contamination of local drinking water supplies. The company is now under further investigation for improper business practices.

IMPACT

- Worker illnesses due to respiratory exposure to hazardous cleaning solvents
- Negative health impacts on community members due to ingestion of drinking water contaminated with hazardous cleaning solvents

AVOID

- Replace solvent-based cleaning units with alternative processes, such as mechanical cleaning, ultrasonic degreasing technology, or biological cleaning in aqueous solutions.
- Substitute TCE with less hazardous cleaning and degreasing solutions.
- Modify working methods to reduce the need for cleaning.

MINIMIZE

- Train personnel on procedures for the safe handling of degreasers, including setting safety devices, maintaining the correct solvent level and monitoring its degree of decomposition, unloading and loading machines at correct speed, repairing leaks, and cleaning effectively.
- Reduce vapor emissions by installing degreasers with improved enclosure and vapor condensation systems, and avoiding air turbulence close to the work area.
- Control vapor emissions through the installation of rim ventilation (lip extraction) on the sides of the degreaser; pass vapor through an adsorption media (e.g. activated carbon) before releasing it to the atmosphere.
- Install an on-site solvent recycling and recovery system or contract the services of a solvent recovery firm to do so.
- Ship solvent waste to an accredited Treatment Storage and Disposal Facility (TSDF) for recovery, or dispose of it through controlled incineration.

OFFSET

- Assist in the remediation of water sources contaminated by TCE
- Provide compensation and proper healthcare to workers and community members impacted by TCE exposure, according to local and national regulations

Metal Cutting Company

RISK: Worker exposure to metalworking fluids

Best Metalworks is a medium-sized metal cutting company in Bulgaria that produces a variety of different metal parts for medical devices. The company has seen increasing rates of employee turnover and employee absenteeism due to health issues. Many workers are complaining of skin irritation, difficulty breathing and other respiratory conditions, such as asthma and bronchitis. A group of workers recently quit after only six months on the job because of health problems and a worker who has been with the company for decades was recently diagnosed with cancer. These issues have been traced to exposure to metalworking fluids (MWFs). MWFs are used to decrease heat and friction in metal production operations and remove small metal particles from grinding and other processes. Workers can be exposed to MWFs by inhaling the vapor or mist or through skin contact (e.g. from splashed liquid). The company asserts that all workers are instructed to wear personal protective equipment (PPE) to limit their exposure. However, workers have to pay for their own PPE. As a result, many workers do not actually use the PPE and are vulnerable to MWF exposure. Many workers also do not remember any training on proper handling of MWFs.

IMPACT
<ul style="list-style-type: none"> Negative health impacts on workers
AVOID
<ul style="list-style-type: none"> Obtain Material Safety Data Sheets (MSDS) from suppliers to learn about MWFs' composition and associated hazards. Select and use MWFs with the lowest amount of toxic materials. Install ventilation systems and maintain them regularly to ensure that they are working properly. Repair and replace the systems as needed. Develop and implement policies and procedures for the proper handling of MWFs and maintenance of equipment to reduce MWFs contamination. Place washing stations close to the work area to encourage good washing practices.
MINIMIZE
<ul style="list-style-type: none"> Develop and implement a training program for all metalworking personnel about the hazards of MWFs and techniques to avoid and limit exposure, including regular housekeeping, proper cleaning techniques and appropriate use of personal protective equipment. Include information on good hygiene practices to limit exposure, such as regular hand-washing and changing contaminated clothing. Based on a risk assessment, provide personnel with appropriate protective equipment free of charge (e.g. "resistant to oil" or oil-proof respiratory protection, goggles, face shields, gloves, chemical-resistant clothing). Install emergency showers near working areas. Regularly assess workers' exposure to MWFs. Identify high exposure tasks and monitor them through the appropriate air sampling strategy (e.g. personal air sampling). Monitoring results will determine if engineering and work practice controls are effective. Periodically conduct medical screenings of workers exposed to MWFs to facilitate early diagnosis and treatment of associated diseases. Examination should include an employee-completed health questionnaire, limited examination of the areas of the body at risk (lungs and skin), and measurement of lung function (pulmonary capacity test). Maintain records of all MWF-related accidents and worker's medical screenings. Conduct regular review and root-cause analysis.
OFFSET
<ul style="list-style-type: none"> Provide medical care and timely assistance to affected workers. Compensate for work-related health impacts and loss of ability to work according to local and national regulations.

Pipe Construction Company

RISK: Worker exposure to welding fumes

Metal Pipes is a medium-sized pipe production company in Bangladesh. The company is producing pipes for a buried pipeline project that will improve irrigation in certain areas of the country. The client recently halted production due to the deaths of two workers and concerns about working conditions. The company claimed to have no connection to the deaths. However, many workers complain of flu-like symptoms, especially at the beginning of the work week. Since they are not paid for sick days, none of the workers have taken any time off from work. Further investigation into the source of the illness and cause of death determined that the workers are regularly exposed to high levels of welding fumes. The workers who died had acute exposure to welding fumes because they worked in a confined, unventilated space. Welding fumes are formed during the heating of metal in welding processes. Exposure can produce significant health impacts, including metal fume fever, asthma, cancer and even death. The fumes can also ignite if they interact with flames. The company claimed to have instituted control measures, but the workers were not using any personal protective equipment (PPE), and there are no ventilation systems in the facility. As a result, workers are exposed to welding fumes for eight to ten hours each day in non-ventilated spaces.

IMPACT

- Worker illnesses and loss of life

AVOID

- Modify processes and implement new methods, such as cold jointing techniques, to decrease the need for hot work overall.
- Install forced exhaust ventilation systems in working areas and implement a regular maintenance program to ensure that they are consistently effective. Install spark arresters in welding fume extraction systems to prevent fires.
- Train workers about the hazards of metal fumes and safe work practices.
- Develop, implement and communicate emergency preparedness and response procedures in case of fire from ignited fumes. Regularly train workers on fire response and conduct evacuation drills in all shifts.
- Eliminate the use of specific plating materials (e.g. cadmium) that produce the worst health impacts.

MINIMIZE

- Assess current welding techniques and replace them with methods that produce fewer fumes.
- Ensure that metals are cleaned properly prior to welding. Remove coatings that increase the toxicity of fumes.
- Assess work stations and reposition workers so that they are not positioned directly in the fume cloud. Develop and implement policies and procedures regarding working hours, breaks and paid sick days. Limit workers' overtime and ensure they take regular breaks to reduce exposure time.
- Monitor workers' exposure to welding fumes regularly through the appropriate air sampling strategy (e.g. personal air sampling) to check if controls in place are effective.
- Based on a risk assessment provide personnel with appropriate PPE free of charge. Train workers on the proper use and maintenance of their PPE, and monitor regularly to ensure workers are using their PPE correctly.
- Establish and follow a maintenance schedule for welding machinery. Train workers on proper maintenance procedures. Conduct periodic medical check-ups for workers to monitor health impacts of metal fumes.
- Train workers to identify symptoms of welding fumes exposure and encourage them to report issues to their supervisors.

OFFSET

- Provide compensation and proper healthcare to workers impacted by metal fume exposure according to local and national regulations.

Construction Material Manufacturer

RISK: Malfunctioning or improperly used machines

MTC is a large steel manufacturer in Turkey. The company is one of the oldest in the country and produces steel channels, anchors and other products for construction. The company has had plans to update its facility and machines for years, but has not yet implemented them. As a result, many of the machines are 5 to 10 years old. Recently, a worker was injured while operating a 10-year old computer numerical control (CNC) punch press that did not have proper safeguards in place. The multi-punch press had a malfunctioning part, which caused it to punch two holes simultaneously instead of one. The worker was new to the company and had not been trained properly, so he reached across the front of the machine to push the malfunctioning part back into place. When the punch press cycled, the worker's hand became caught in a pinch point between the top of the ram and the machine housing, and three of his fingers were crushed by the machine. The company claimed that the accident was caused by worker carelessness.

IMPACT

- Worker injury due to traumatic amputations and loss of digits

AVOID

- Develop and implement policies and procedures for the proper maintenance of all machines in accordance with manufacturer's specifications to ensure they are in safe working condition.
- Shut down and repair machines the first time that they malfunction to prevent possible incidents. Do not allow workers to use malfunctioning machinery.
- Replace machines when they have become ineffective or pose a danger to workers. Install effective safeguards on machinery to prevent hands, arms, and other body parts from contacting hazardous moving parts.
- Arrange work areas so that workers can easily access equipment and controls without reaching across moving parts.
- Inspect machines regularly and update risk assessments accordingly. Include an assessment of all potentially hazardous interactions that workers might have with machines.

MINIMIZE

- Implement an orientation and on-going training program for all workers to inform and remind them about workplace hazards and how to safely operate machinery. As part of the training, instruct workers not to wear loose-fitting clothing, dangling jewelry or expose long hair, since these can become caught in machines. Workers should also lock out equipment before clearing obstructions or doing any maintenance.
- Assign a responsible staff member to monitor workers who interact with the moving parts of machinery.
- Post work instructions for safely operating equipment throughout the facility in a form that workers can understand (e.g. in their native language or using illustrations).
- Instruct workers to report any unsafe conditions.
- Provide proper lighting in each work area.

OFFSET

- Provide medical care for workers who are injured in the workplace.
- Provide compensation for worker injury or lost ability to work, according to local and national regulations.

Automotive Parts Manufacturer

RISK: High concentration of metal dust in the workplace

RIMS Co. is a metal products company in eastern China. The company employs 450 workers and specializes in polishing metal wheel rims for automobile companies. This process produces a significant amount of metal dust, especially aluminum and magnesium. Many workers have complained that it is difficult to breathe in the factory since the dust goes through their face masks. They leave the factory covered in grey dust. A couple of weeks ago, there was an explosion at a similar factory nearby. Investigators have determined that the explosion was caused by the ignition of built-up combustible metal dust in the ventilation ducts. The explosion killed 50 people and injured 150 workers. This horrible accident brought attention to metal products companies in the area. The management of RIMS Co. is now determined to prevent a similar accident from happening in its factory and is taking steps to improve its dust removal processes.

IMPACT

- Worker illnesses due to airborne contaminants in the workplace
- Fatal and nonfatal worker injuries due to explosions

AVOID

- Annually conduct a fire and emergency risk assessment to evaluate root causes of potential explosions, focusing especially on combustible and water-reactive metal dust.
- Install a dust collection system to efficiently capture dust from equipment. Hoods, enclosures, ductwork and collectors must be appropriately designed and built to reduce risks of explosion (see National Fire Protection Association - NFPA standards).
- Regularly monitor the concentration of metal fines in the ductwork to ensure that it is safely below the lower explosive limit.
- Regularly monitor the concentration of airborne metal fines in the workplace to ensure that it is below the occupational exposure limits.
- Implement a dust housekeeping program to regularly clean and remove dust from the factory.
- Ensure that Safety Data Sheets (SDSs) are completed and available for all materials.

MINIMIZE

- Install appropriate fire and explosion protection systems (e.g. isolation, suppression and venting devices).
- Ensure that proper and adequate fire suppressing agents are in place throughout the facility, such as a Class D type fire extinguisher. Do not use water or foam fire extinguishers on combustible metal fires due to the water-reactivity of alkali metals.
- Establish, communicate and implement a fire safety and emergency preparedness and response plan through a joint worker-manager occupational health and safety committee.
- Conduct worker trainings on emergency preparedness and response procedures, including identification of workplace hazards, safe operation of machines, use of fire and explosion protection systems, equipment maintenance, and housekeeping procedures.
- Assemble and regularly train fire-fighting and emergency response teams. The number of responders must be proportional to the total workforce and there should be at least one for each section of the facility.
- Conduct emergency drills regularly for workers in all shifts, including contract and temporary workers.
- Implement a risk-free communication channel to receive workers' feedback on health and safety conditions in the workplace, especially related to the build-up of combustible dust. Reward workers for alerting management to hazards.

OFFSET

- Provide medical care to those injured in the workplace.
- Compensate for loss of life and loss of ability to work due to injury according to local/national laws and regulations.
- Ensure that workers continue to receive salary until re-opening of area damaged by explosion.

Steel Manufacturer

RISK: Lack of protection for temporary/contract workers

ABC Manufacturing is a large steel manufacturing company in India. The company employs contract workers to carry out temporary projects at its manufacturing facility. In total, the company hires approximately 1,500 contract workers on a regular basis from a variety of different labor contractors. One recent project required workers to work on raised platforms. This work can be dangerous and requires appropriate use of personal protective equipment (PPE). However, many of the workers are not trained properly and do not wear the proper harness or neglect to fasten the hook to a firm supporting structure above the working platform. This can cause accidental falls. Recently, one worker fell and broke his leg during his first month on the job. As a contract worker, he should have received a state insurance card, which covers any hospitalization or medical treatment. However, he never received his insurance card and had to pay for all of his medical costs due to the accident out of pocket. The company refused to compensate him for the costs since he was hired through a labor contractor. The contractor also refused to accept responsibility. He could not afford the costs and had to borrow money at a high interest rate from a local money lender.

IMPACT

- Worker injury or loss of life due to lack of safety training
- Worker economic insecurity due to lack of legal protection or social insurance

AVOID

- Develop and implement policies and procedures regarding workers' compensation insurance. Communicate policies to labor contractor. Do not assign workers to hazardous jobs unless proof of insurance coverage is provided.

MINIMIZE

- Provide workers with appropriate PPE free of charge based on a risk assessment. Safety belt and harness should be made of materials strong enough to hold the weight of the worker in case of an accidental fall.
- Train workers, including contract workers, on safety procedures and use of PPE. Ensure that workers understand the instructions by conducting a simulation prior to worker deployment at the worksite.
- Assign a responsible staff member to monitor working platforms and ensure that they are properly installed. Structures should be equipped with safety nets, be fastened and bolted properly, and have appropriate fasteners where workers can clamp their harness hook.
- Assign a responsible staff member to monitor working practices of workers in hazardous jobs.
- Record all accidents and near misses, including those involving contractors, and conduct an analysis to identify the root causes.

OFFSET

- Provide medical care for workers who are injured in the workplace.
- Work with the contractor to provide compensation for worker injury and lost ability to work according to local and national regulations.

Boiler Manufacturer

RISK: Excessive overtime

MNC Incorporated is a medium-size boiler manufacturing company in South Africa. The company produces steam boilers that are used in process industries. The company is located in a remote area away from any major cities. As a result, it is difficult for the company to recruit workers with the necessary skill level. High-skilled workers are reluctant to join the company due to its location and lack of facilities. Furthermore, the growth of process industries in the country has increased the demand for MNC's products. The company is struggling to keep up with demand, but does not want to turn down orders and lose business to its competitors. In order to accommodate the increased demand, the company has been increasing the number of hours its workers are required to work. Though the national law limits working hours per week to 55 hours, including overtime, the company has been deploying workers for an average of 90 hours per week. This is almost double the number of allowed working hours. And, due to the strenuous nature of the work, this excessive overtime has resulted in deterioration of product quality over the past year. Customers have begun to complain and demand compensation for defective products. The local authorities have also taken notice of the company's practices and have issued a warning that any further violation will result in suspension of the factory's operating license. The company's management must now review its operations to remedy the issue.

IMPACT

- Workplace injuries/illnesses caused by workers' fatigue due to excessive overtime
- Reduced product quality and lost business
- Suspension of operating license and damage to company's reputation

AVOID

- Review current production planning to avoid committing to unrealistic delivery schedules. Restrict contracts to orders that are feasible to complete within the legal working hours.
- Develop, communicate and implement policies and procedures for working hours in conformance with national laws, including provisions for overtime work:
 - Normal working hours should not exceed 48 hours per week and workers should receive at least one day off after every six consecutive working days, unless there are exceptions in national law or collective bargaining agreements.
 - Overtime should not exceed 12 hours per week
 - Overtime should not be mandated on a regular basis and workers should be allowed to refuse overtime without penalty.

MINIMIZE

- Identify processes that can be modified to shorten the amount of time needed for production and delivery.
- Develop and implement strategies to recruit skilled workers. Consider providing incentives, such as transportation to/from the facility and the nearest city, accommodation for workers (according to decent standards) and an educational facility for workers' children.
- Establish connections with technical training institutes to recruit trainees with the necessary skill level. Ensure that the trainee program is conducted according to regulations and does not expose young workers to hazardous situations.
- Add shifts, modify the timing of shifts, or create more flexible working schedules to minimize overtime in any single shift operation. Develop a long-term vendor development plan to meet exigencies of workload through sub-contracting to reliable suppliers.

OFFSET

- Retroactively compensate for overtime work at the established overtime premium rate.
- Conduct periodic medical check-ups for workers. Provide adequate rest and suitable medical assistance to workers suffering from fatigue.

Organizational Capacity and Competency

A well-implemented ESMS is ultimately about trained, committed people. How do you make that happen?

ROLES, RESPONSIBILITIES AND AUTHORITIES TO IMPLEMENT THE ESMS

First, you need senior management commitment. Senior management commitment starts with adopting the ESMS policies, but it must go beyond that. Senior management support is critical to implementing a sustainable ESMS. It is the responsibility of senior management to lead the effort. They don't have to lead the effort on a day-to-day basis, but they do need to send a clear message, to all employees at all levels, that this is a long-term commitment by your company.

Beyond senior management commitment, you need a team that takes responsibility for the ESMS. This does not need to be a full-time job for anyone, but senior management needs to ensure realignment of reporting duties, allocation of appropriate time and authority to carry out the work involved.

A well-balanced ESMS Team is a prerequisite for meaningful engagement with your peers and colleagues. It should include knowledgeable professionals from environment, health and safety, operations or production, contracts and purchasing, human resources, for example.

In fact, the success of a management system depends on departments that have traditionally been seen as beyond the reach of environmental and social issues, such as human resources, production, procurement and maintenance. For example, human resources manages training needs related to the labor aspects; production focuses on the more efficient use of resources and the reduction of waste; procurement manages the qualifications and performance of suppliers and contractors; and maintenance ensures that the equipment runs efficiently and that spills, leaks and other emergency situations are minimized.

The ESMS Team should not work in isolation when identifying risks and impacts, developing improved procedures, designing actions plans, etc. To be truly effective, the ESMS Team needs to consult with people from all levels of the company, including supervisors and workers, as they are key frontline identifiers of problems.

5 All levels of the company are trained and engaged – multiple units and workers as well as managers. E&S staff has implementation authority. Management commitment is reflected in resources devoted to E&S management and training.

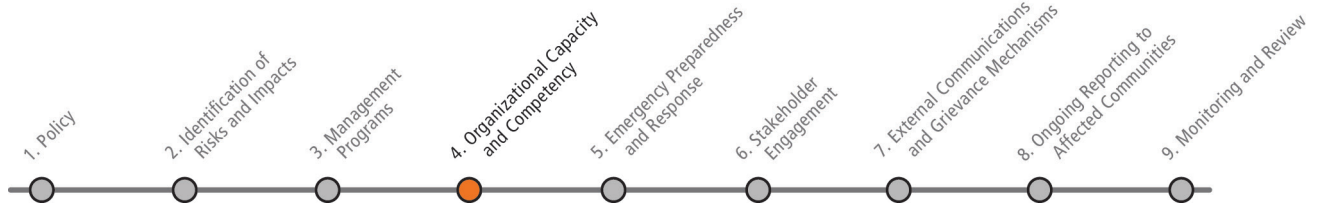
4 Multiple units have E&S responsibilities, and senior management is involved. E&S is managed as an integrated system. New staff receives some E&S management guidance.

3 All levels of the company are involved in awareness training. E&S roles and responsibilities are assigned and part of daily operations. E&S staff is trained and competent.

2 E&S roles are defined and assigned. Each issue is handled only by one functional area. Some awareness training is provided at orientation and additional training is provided for EHS staff.

1 No assigned staff with E&S management responsibilities. Some limited awareness and E&S roles and responsibilities starting to get defined. No systems awareness or repeatable processes.

0 No internal awareness and no formally assigned responsibility for E&S.



As with the overall management system, the team should be scaled to the size and complexity of your company. Your organization might not have multiple departments with distinct roles; maybe a few people cover several functions. The key is to involve people across the range of functions. If a team already exists in your company (e.g. fire safety team, health and safety committee) consider building your ESMS Team upon it.

Once the ESMS Team is selected, the team members need to select a team leader. This is an important role, especially in the beginning. The team leader needs to set the tone for the group and keep people motivated. All new initiatives in a company face hurdles, and developing and implementing an ESMS is no exception. The team leader needs to help the team overcome the inevitable hurdles, and should have direct access to senior management.



Take a look at the Toolkit item **Roadmap and Time Estimate for Developing and Implementing an ESMS** in the Toolkit for a list and sequencing of activities to develop and implement an ESMS.

When selecting a team leader, look for someone who has the following qualities:

- communicator;
- problem-solver;
- project manager;
- pragmatic; and
- respectful to all.

EXAMPLE OF AN ESMS TEAM



COMMUNICATION AND TRAINING

Now that you have identified the actions to be taken and updated your procedures, you need trained, committed people who follow the ESMS procedures. This is the end goal of communication and training.

There are three key steps that build on each other:

1. They need to be aware of the ESMS.

- What is it?
- What are its goals?
- What do I need to do?

2. They need to understand that the ESMS is necessary and will improve the company.

- How does this help our company?
- How does it help my department?
- What will change?
- What is in it for me?

3. They need to obtain the skills and knowledge to be effective in their roles.

- What are the new policies and procedures?
- What exactly do I need to do?
- How do I do that?
- What will happen if I don't do it?

TIP**Effective Communication and Training**

Ask yourself if the goal of this specific communication or training module is to build awareness, to gain commitment and/or give people the knowledge and skills needed to implement.

Your ESMS Team needs detailed training to develop the necessary knowledge and skills. They will need to understand the basics of the Plan-Do-Check-Act cycle and know the nine elements of an ESMS. This Handbook provides the information they will need, but additional help may be necessary. In addition to the detailed training of the team, everyone will need to receive awareness training so there is a shared understanding of the goals of the ESMS.

The chapters in this Handbook provide an easy way to structure efficient general training. You can give everybody an overview about what you have learned here about developing and implementing an ESMS.

You may also need to provide training that is specifically related to your Action Plan and new operating procedures.

Examine the specific actions and who is going to be involved. This is a quick way to determine what training will be needed by the various departments and people in your company. Ask yourself what knowledge and skills do people need to effectively implement new procedures, carry out allocated responsibilities and complete the action plan.



Use the Toolkit item **Training Plan Worksheet** as template and tie it to your Action Plans and improved procedures.

AWARENESS**COMMITMENT****IMPLEMENTATION**

Emergency Preparedness and Response

5

Regular engagement with local community and government for onsite and offsite emergency plan. Formal resource-sharing agreements with neighboring companies.

4

Senior management and all units and shifts, including contract and temporary workers, participate in emergency risk assessment, preparedness planning and mock drills. Continual improvement.

3

All onsite and off-site emergency issues have been identified and an effective preparedness plan is in place. The plan meets the local regulatory requirements and the local industry best practices.

2

The emergency preparedness plan is in place, but there is no evidence of consistent implementation. Some trainings are provided to the workers on emergency requirements.

1

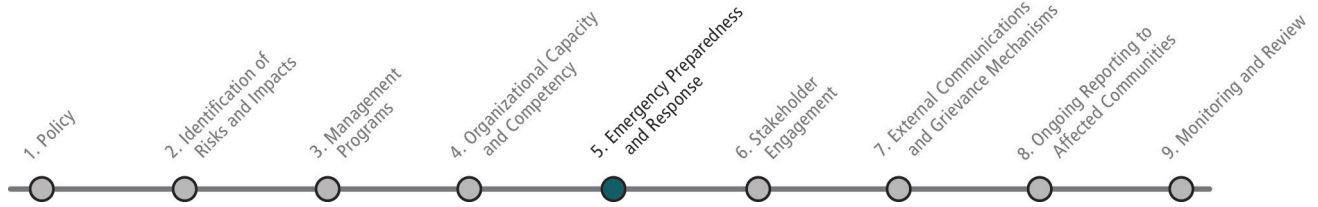
Emergency management planning is not effective, as all emergency risks have not been identified. Occasional trainings are provided to workers.

0

Very limited emergency control and personal protective equipment. No formal plan in place.

Even when you have considered all the risks and put the appropriate management programs in place, accidents and emergency situations can happen.

Your business is a dynamic operation, and many things change from day to day – people go in and out of your workforce, materials and suppliers enter and exit your supply chain, facilities and equipment are added to and removed from your production line. A management system will help to maintain continuity and consistency throughout these changes. However, there may be a momentary lapse or gaps in the system (e.g. someone not properly trained, someone not following the procedures, a machine breakdown), or an external force (e.g. natural disaster) that can lead to an accident or emergency situation at your facility. While it is not always possible to prevent such situations, you can be prepared to respond effectively to prevent and mitigate any harm to your workers, community and the environment.



The key to effective response is effective preparation. The following steps will help you to anticipate the possible scenarios and prepare accordingly:

- Identify the areas where accidents and emergency situations may occur, and communities and individuals that may be impacted. This should begin during your overall risk and impact assessment, through your process analysis, physical mapping and consultations with workers, experts and the community.
- Develop response procedures for each identified emergency situation that clearly explain what actions need to be taken. These need to be detailed clearly for everyone in your company to understand what he or she needs to do.
- Provide the necessary equipment and resources to effectively implement the response plans. A stockpile of fire extinguishers does not put out fires, unless people can effectively find and use them when needed. Think about equipment that is easy for people to use and is located where it can be immediately accessed during accidents and emergencies.
- Assign responsibilities so that each activity has people responsible for carrying it out. Also designate people who will routinely analyze how well the system is working and update the risk assessment and plans.
- Communicate so that everyone in your company understands the importance of the emergency preparedness and response system and is encouraged to help monitor and improve its effectiveness. Also include people in the community who may be affected.
- Provide periodic training so that everyone in your company has an overview of the system, and knows the response plans. Don't just lecture about what to do – ask for and obtain input on what needs to be addressed and what can be improved. Even with the most detailed procedures and plans, people will need to exercise individual judgment and adapt to quickly changing situations. This is more likely to happen if you engage people in all aspects of the system beforehand.
- Work with government agencies and community groups to identify areas where you can collaborate to respond effectively to internal and external situations.
- Conduct periodic checks and drills to test how well the system is working and to re-assess the risks to reflect changing conditions. Incorporate your findings to continually improve your system.
- Remember, it is essential that the emergency response plan be site specific. Even if you have similar operations at two different sites, it does not mean that the same emergency plan would be effective at both locations. An emergency response plan at each site should be independently reviewed for its suitability and effectiveness.



Look at the **Sample Fire Response Procedure** and **Sample Chemical Spill Response Procedure** Flowchart for examples.

An Emergency Preparedness and Response Plan should include:

- identification of potential emergencies based on hazard assessment;
- procedures to respond to the identified emergency situations;
- procedures to shut down equipment;
- procedures to contain and limit pollution;
- procedures for decontamination;
- procedures for rescue and evacuation, including a designated meeting place outside the facility;
- location of alarms and schedule of maintenance;
- list and location of equipment and facilities for employees responsible for responding to the emergency (fire-fighting equipment, spill response equipment, personal protection equipment for the emergency response teams, first aid kits and stations);
- protocols for the use of the emergency equipment and facilities;
- schedule for periodic inspection, testing and maintenance of emergency equipment;
- clear identification of evacuation routes and meeting points;
- schedule of trainings (drills), including with local emergency response services (fire fighters);
- procedures for emergency drills;
- emergency contacts and communication protocols, including with affected communities when necessary, and procedures for interaction with the government authorities;
- procedures for periodic review and update of emergency response plans.

Common OHS Hazards and Emergency Situations in the Metal Products Manufacturing Industry

Occupational Health and Safety (OHS) hazards in the workplace can be divided into five categories: physical, chemical, biological, ergonomic and radiological.

You should identify the specific hazards that are relevant to your company's operations during your risk assessment, using methodologies such as job safety reviews or job hazard analyses. The results of these analyses and the tasks required to mitigate the identified hazards should be incorporated into action plans, which also stipulate the assigned responsible staff and expected timelines for completion.

Your management program should seek to first avoid negative impacts from each hazard, by eliminating or substituting the equipment, material, or work practice that is causing the hazard. If it is not possible to eliminate the hazard, you should seek to minimize its impacts by instituting engineering controls (e.g. by installing machine guards or active ventilation) and administrative controls (e.g. job rotation, clear work instructions or warning signage). You should also provide technically appropriate personal protective equipment (PPE) and train your personnel on the appropriate use and maintenance of supplied PPE.

OHS emergency situations often occur because of gaps in a company's management system. Thus, even though the hazards may seem to be very different, such as slips and falls on spilled liquids vs. exposure to radiation, they are often the result of the same root cause – ineffective implementation of the ESMS. The tables below describe common workplace hazards and their associated potential impacts. They also illustrate how inadequate implementation of any of the 9 ESMS elements can be the root cause of such situations. The examples below are not an exhaustive list of root causes. You should identify gaps in your own system to determine potential root causes of problems during your risk assessment.

PHYSICAL HAZARDS		
Examples	Potential Impacts	
<ul style="list-style-type: none"> • Slipping on spilled liquids (e.g. fuel or lubricants) • Falling from heights (e.g. from a ladder or work platform) • Collision with moving items (e.g. cranes, vehicles or forklifts) • Interacting with improperly enclosed, unguarded or moving machines (e.g. hydraulic forming presses, drill presses, or metal cutting tools) • Being struck by flying metallic particles • Exposure to high noise levels • Exposure to extreme temperatures • Exposure to welding arcs • Touching exposed, damaged or improperly grounded electrical wires • Improper grounding of electrical wires • Ignition of metallic dust or other combustible materials • Explosion of improperly stored oxygen, nitrogen, acetylene or argon gas cylinders (i.e. no protection from heat and sunlight or improper fastening arrangement) 	<ul style="list-style-type: none"> • Sprains and strains • Fractures • Cuts, abrasions, puncture wounds • Traumatic amputation • Eye injuries • Hearing threshold shifts and loss • Heat stress, dehydration, heat stroke • Electrocutation • Asphyxiation and burnings in case of fire • Death <p>Fires or explosions from ignited combustible materials can lead to massive loss of life and destruction of property.</p>	
Potential Root Causes		
Management Program: <ul style="list-style-type: none"> • Lack of, inadequate, or improperly implemented safety procedures 	Organizational Capacity and Competency: <ul style="list-style-type: none"> • Insufficient worker training about hazards • Failure to nominate responsible party for managing hazards 	Emergency Preparedness and Response: <ul style="list-style-type: none"> • Lack of or inadequate emergency preparedness and response plan • Insufficient mock drills • Contract and temporary workers not included in emergency planning

CHEMICAL HAZARDS		
Examples	Potential Impacts	
<ul style="list-style-type: none"> • Skin contact or inhalation of toxic and carcinogenic substances contained in metallic fumes, metal working fluids, metal cleaning solvents, or priming and painting compounds • Ignition of flammable liquids and gases 	<ul style="list-style-type: none"> • Skin irritation and burns • Irritation of eyes, nose and throat • Breathing difficulty • Intoxication • Damage to internal organs • Damage to nervous, immune, and reproductive systems • Cancer • Asphyxiation and/or burning in case of fire • Death <p>Fires from ignited flammable liquids or gases may have disastrous impacts on worker safety and your business.</p>	
Potential Root Causes		
<p>Identification of Risks and Impacts:</p> <ul style="list-style-type: none"> • Incomplete risk assessment of chemicals and raw materials used in the facility • Lack of awareness of chemical risks in the workplaces 	<p>Management Program:</p> <ul style="list-style-type: none"> • Use of incompatible or damaged storage containers • Uninformed or incorrect labeling • Insufficient monitoring of allowable chemical concentrations in the workplace • Inadequate PPE 	<p>Emergency Preparedness and Response:</p> <ul style="list-style-type: none"> • Lack of or incomplete emergency response planning • Poorly executed emergency detection, alarms, evacuation, and fire suppression systems • Insufficient worker training and mock drills • Lack of communication or awareness of individual responsibilities during emergencies.

BIOLOGICAL HAZARDS		
Examples	Potential Impacts	
<ul style="list-style-type: none"> • Exposure to bodily fluids that may carry pathogens (e.g. when treating an injured worker) • Exposure to pathogens due to lack of hygiene in canteen facilities and amongst food handlers 	<ul style="list-style-type: none"> • Debilitating illnesses among workers and even death 	
Potential Root Causes		
Policy: <ul style="list-style-type: none"> • Lack of, inadequate or improperly implemented safety policies and procedures 	Emergency Preparedness and Response: <ul style="list-style-type: none"> • Failure to nominate emergency response brigades • Insufficient worker training on first aid response 	Monitoring and Review: <ul style="list-style-type: none"> • Failure to monitor and review hygiene practices and improve them as needed

ERGONOMIC HAZARDS		
Examples	Potential Impacts	
<ul style="list-style-type: none"> • Heavy lifting or improper lifting techniques • Repetitive motions • Improperly aligned work stations • Insufficient and restricted work space • Standing for extended periods of time • Continued forceful exertions • Inadequate lighting 	<ul style="list-style-type: none"> • Strains and sprains to muscles and connective tissues causing pain, inflammation, numbness, or loss of muscle function • Lower back injuries • Permanent disabilities • Eyestrain 	
Potential Root Causes		
Identification of Risks and Impacts: <ul style="list-style-type: none"> • Incomplete risk assessment of working areas • Lack of awareness of ergonomic risks in the workplaces 	Management Program: <ul style="list-style-type: none"> • Insufficient number of staff to perform duties (e.g. heavy lifting) • Insufficient breaks • Inadequate PPE • Inadequate medical care for staff 	Organizational Capacity and Competency: <ul style="list-style-type: none"> • Deficient worker training on proper techniques for lifting or performing duties • Failure to nominate responsible party for managing ergonomic hazards

RADIOLOGICAL HAZARDS		
Examples	Potential Impacts	
<ul style="list-style-type: none"> • Exposure to radiation (e.g. x-ray from non-invasive testing, UV radiation from welding) • Continued exposure to radiation from electronic equipment • Exposure to laser light 	<ul style="list-style-type: none"> • Radiation sickness • Cancer • Welder's eye • Skin cancer • Eye injuries 	
Potential Root Causes		
Identification of Risks and Impacts: <ul style="list-style-type: none"> • Lack of awareness of radiation sources and associated risks in the company 	Management Program: <ul style="list-style-type: none"> • Use of non-certified equipment and radiation sources • Use of expired radiation licenses • Deficient procedures regarding allowable exposure limits and worker exposure periods 	Monitoring and Review: <ul style="list-style-type: none"> • Inadequate monitoring of worker exposure to radiation sources

Emergencies Caused by External Events

In addition to emergencies that may result from workplace hazards, all workplaces are also vulnerable to other types of accidents and emergencies, including manmade or natural disasters. Some of these situations may be preventable, such as fires resulting from improperly stored flammable chemicals, while other may not be, such as an earthquake.

The following list includes common types of emergencies, all of which can result in significant worker injury or death, as well as disruption of operations, destruction of property, and severe financial losses.

During your risk assessment, you should identify the emergencies that are most likely to occur in your area and create a comprehensive emergency preparedness plan so you can respond properly to the unplanned event and minimize damage to your company and workers in case of an emergency.

Possible manmade or natural disasters include:

- storms, including tornados, typhoons, and hurricanes (many can result in flooding);
- flooding, earthquakes and associated tsunamis, and volcanic eruptions;
- local and regional fires;
- explosions, including accidental, military or terrorism;
- civil unrest; and
- chemical spill or release of hazardous substances due to ruptured containers, transport accidents, earthquakes and other natural disasters.

Stakeholder Engagement

5

Stakeholder engagement is part of regular activities. Awareness and engagement at senior levels. Fluent and inclusive communication and consultation process with stakeholders.

4

Multiple and ongoing public consultation and participation in a culturally appropriate manner. Stakeholder feedback is actively considered. Reporting to communities and effective grievance mechanism is evidenced by formal records.

3

Stakeholders have been identified and engaged in several events with effective dialogue. Some procedures and assigned responsibility for engaging with stakeholders.

2

Some public events, limited ongoing engagement process. Sporadic and selective responses when approached by stakeholders.

1

Limited channels in place. A few meetings and discussions, but not an ongoing process yet.

0

Little or no transparency with stakeholders.

Your company may have an impact on the lives of many people and organizations. All of these people and organizations are your stakeholders - they have a stake in your company's financial, environmental and social performance.

Look at the diagram below and think about how your company interacts with each group. Your relationship with each group is different, and you need to adapt the way you engage with each of them to mitigate risks to your business.

Systematically engaging with affected communities in the identification and management of the impacts that negatively affect them contributes to building trust, credibility and local support. Engaging with them also provides the opportunity to highlight the positive aspects of the company's presence. This lowers the risk of anti-company sentiments that could lead to costly litigation or disruption of company operations.





Other stakeholders such as activists and NGOs may not be directly affected by your operations but may have an interest in what you do. Keeping these groups informed and maintaining an open communication channel may lower the risk of negative campaigns that could affect your company's reputation.

MAPPING YOUR STAKEHOLDERS

The first step in building a relationship with your stakeholders is to identify them. To start, look back at your risk assessment and the areas of potential negative impacts and identify who would be directly or indirectly impacted.

Once you have identified your stakeholders, you should prioritize the different groups based on the nature and severity of the impacts, and the ability of these groups to influence your business. Engagement should be stronger and more frequent with those groups that are more severely affected, as well as with those that have a greater ability to influence your business.

Also, as you identify your stakeholders and the issues that may affect or interest them, you can tailor your communication material and methods to effectively engage with each of them.

INTERNAL AND EXTERNAL STAKEHOLDERS

Workers are an important internal stakeholder group. They also need to be involved in the identification of risks that affect them and be consulted when developing action plans and procedures. However, the methods of engagement with them will differ from those used for external stakeholders.



Use the Toolkit item **Stakeholder Map** and **Impact Zoning Tool for Affected Communities** to get started.

For effective consultation with affected communities :

- Start early;
- Disclose meaningful and accurate information;
- Use culturally appropriate means to reach them;
- Provide opportunities for two-way dialogue ;
- Document to keep track of issues raised; and
- Report back on how their input has been used and considered

DEVELOPING A STAKEHOLDER ENGAGEMENT PLAN

After mapping your stakeholders, the next step is to develop a plan for how to engage with the groups that you have identified. Your stakeholder engagement plan can be simple. But it is important to be proactive and to address key environmental and social concerns.

At a minimum, even if your company does not have adverse impacts on communities or other stakeholders, you should always implement a procedure to receive communications from the public and accordingly adjust your management program (see Element 7, External Communications and Grievance Mechanisms).

If it is determined that there are affected communities, you need to implement a Grievance Mechanism (see Element 7, External Communications and Grievance Mechanisms) and actively engage them in consultation, regularly disclosing clear and meaningful information on both your impacts and potential benefits, and providing communities with opportunities to express their concerns and suggestions.

In the case of potentially significant adverse impacts to individuals and communities, you should engage them in a process of Informed Consultation and Participation (ICP). Compared to a consultation process, an ICP should ensure a more in-depth exchange of information and a higher level of participation from affected stakeholders in decision-making, so that their proposed mitigation measures are incorporated into the company's action plan.

Finally, you should periodically report to affected stakeholders on the actions your company is putting in place to address the issues identified through the engagement process (see Element 8, Ongoing Reporting to Affected Communities).

Regular communication with the various stakeholder groups is an excellent way for you to understand how company operations affect them and to get early warnings of potential problems. In all your efforts to reach out to stakeholders, ensure that you do so early on – relationship-building takes time. Don't wait until a crisis arises to act, as it will be more difficult without those relationships in place to manage the problem.



Use the Toolkit item **Stakeholder Engagement Plan Worksheet** to record how you will engage with the important stakeholder groups.

TIP

Effective Stakeholder Engagement

- Be strategic and prioritize which stakeholders to approach – you may not have the resources to engage them all at once.
- Update your stakeholder map regularly and in the case of significant events (e.g., changes to your business, government elections, natural disasters, etc.).
- Be aware of what issues are important to each group.
- If you are dealing with a representative for the group, make sure that he/she legitimately represents the interests of the affected groups and communities.
- Engage with stakeholders in their own communities and places where they feel comfortable.
- Reach out to vulnerable and marginalized groups.
- Keep a record of questions, comments and suggestions. Records provide important information that should be used to adapt your Action Plans and improve your ESMS.
- Recognize that your employees are a good link to stakeholders in the “outside world.”
- Be prepared to respond to stakeholders, and do not generate expectations that cannot or will not be fulfilled.

DEFINITIONS

Stakeholder	Any person or organization that has an interest in or is affected by your company
Affected Communities	People or communities who are subject to company-related adverse impacts on their environment, infrastructure, way of life, personal safety, health or livelihood.

For more information on how to develop and implement a Stakeholder Engagement Plan, refer to the Good Practice Handbook “*Stakeholder Engagement*,” IFC (2007).

External Communications and Grievance Mechanisms

5

Proactive and responsive external communication and grievance mechanism. Stakeholders are consulted on ESMS effectiveness and are part of the regular review process.

4

Effective grievance mechanism is evidenced by formal records. There is routine review of the records and the effectiveness of the program.

3

Grievance mechanism is fully implemented; however, there is not enough evidence of its effectiveness. No tracking of internal or external awareness; limited tracking of cases.

2

Procedures and assigned responsibilities for receiving and handling complaints. Awareness is limited to those directly handling the complaints.

1

Some basic procedures for receiving complaints. Responsibility limited to one person or unit.

0

No mechanism in place.

If your company has social and environmental impacts in the community, inquiries, concerns and complaints are bound to arise. How you respond to and manage these issues will have significant implications for how your business is perceived and, possibly, whether or not it succeeds.

EXTERNAL COMMUNICATIONS

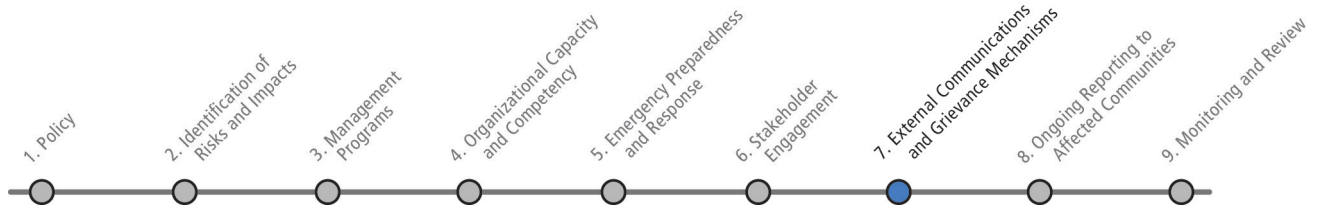
Even if affected communities per se are not identified, you should always establish and maintain a publicly available and easily accessible channel for stakeholders to contact you (e.g., phone number, website, email address, etc.).

External stakeholders can provide valuable information, such as suggestions on product improvement, advance warning in critical situations, feedback on interactions with your employees, and/or comments from regulators, NGOs and individuals regarding your company's environmental and social performance.

The procedure for external communication should include methods to (i) receive, register and validate external communications and requests for information from the public; (ii) screen and assess the importance of the issue raised and determine how to address it; (iii) provide, track, document and publish responses; and (iv) adjust the management program when appropriate.

GRIEVANCE MECHANISMS

The purpose of a grievance mechanism is to establish a way for individuals, groups or communities affected by your business to contact you if they have an inquiry, a concern or a formal complaint.



In practice, a grievance mechanism should:

- Establish a way for people to contact you – openly or anonymously – to pose their questions, to express concerns or to file a complaint. Examples are suggestion boxes, a toll-free telephone hotline, an email address, and regular meetings arranged to discuss particular problem areas.
- Assign a person or team in your company to be responsible for receiving, registering and processing all grievances.
- Establish procedures to register, screen, categorize, investigate and determine resolution and redress options.
- Establish a system to communicate decisions taken and progress on pending actions. It is important that people know when they can expect a response.

Not all complaints can be resolved in the same way. Simpler issues, such as a company truck running over chickens in the road, might be dealt with by the same team responsible for registering the complaint. More complex problems, such as allegations of widespread groundwater contamination, might require immediate intervention by senior managers and more dedicated resources for investigating, documenting and reporting. For complex and recurring problems, consider reaching out to third-party facilitators that can act as independent mediators.

TIP

Implementing a Grievance Mechanism

- Scale it to fit the level and complexity of social and environmental risks and impacts identified in your company.
- Design the process to be easily understandable, accessible, trusted and culturally appropriate.
- Publicize the availability of the grievance procedure so people know where to go and whom to approach.
- Commit to a response time and keep to it as this will increase transparency and a sense of “fair process.”
- Keep records of each step to create a “paper trail.”

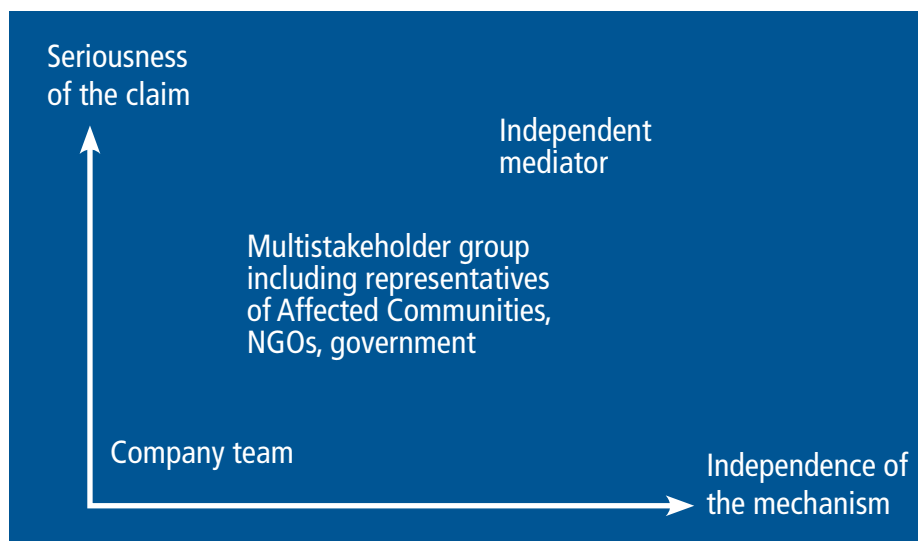
The more serious the claim is, the more independent the mechanism should be to determine the resolution and options for redress.

The most important thing is to make sure the grievance mechanism is accessible and trusted. Tailor it for the local community so that it is easy for them to raise concerns. This requirement mandates having the right people leading this effort inside your company. The grievance mechanism must be accessible at no cost and without retribution to the party that originated the complaint and should not impede access to judicial or administrative remedies.

Don't underestimate the value of a well-implemented grievance mechanism. The information you receive can act as an early-warning system before the problem becomes too costly and time-consuming to address.



Look at the Toolkit items [Checklist for an Effective Grievance Mechanism](#) and [Grievances Log](#) to get started.



TIP

A Grievance Mechanism is

UNDERSTANDABLE AND TRUSTED when:

- affected communities understand the procedure to handle a complaint;
- people are aware of the expected response time; and
- confidentiality of the person raising the complaint is protected.

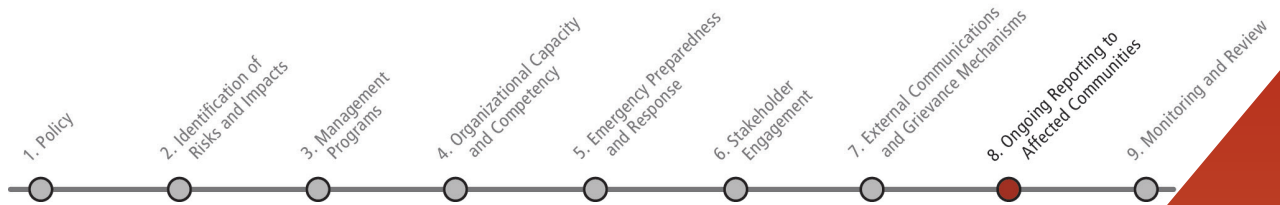
CULTURALLY APPROPRIATE AND ACCESSIBLE when:

- claims can be presented in the local language;
- technology required to present a claim is commonly used (e.g., paper, text messaging, internet); and
- illiterate persons can present verbal complaints.

AT NO COST when:

- people don't need to travel long distances to present a claim; and
- the company covers the costs of third party facilitation.

For more information on how to develop and implement a Grievance Mechanism, refer to the Good Practice Note "*Addressing Grievances from Project-Affected Communities*," IFC (2009), and the Advisory Note "*A Guide to Designing and Implementing Grievance Mechanisms for Development Projects*," CAO (2008).



Ongoing Reporting to Affected Communities

Affected communities will want to know what actions your company has put in place to resolve the issues identified when engaging with them.

Keeping affected communities informed of what you are doing is a critical element for building and maintaining a good relationship. If people know when they will receive an update, it helps to build trust. It can also reduce the amount of time you spend responding to questions.

The frequency of this communication will be proportional to the scale of stakeholders' concerns, but it should be at least annual. If your company's activities change or new environmental and social risks emerge, you do need to contact stakeholders outside of the regular schedule to discuss these changes.

Affected communities' issues and concerns are proactively addressed. There is ongoing communication to avoid risks and impacts before new projects as well as to address existing issues.

Reporting to affected communities is regularly implemented and evidenced in documentation. Key units are involved in the review of the key issues.

When applicable, consultation processes have been implemented. External consultants are involved as required. No ongoing review.

Procedures in place for reporting, usually assigned to E&S staff. Primarily reactive.

Some basic communications with affected communities, mostly limited to meetings.

No reporting.

TIP

Ongoing Communication

- Provide an immediate update if new environmental or social risks emerge.
- Report progress on implementation of your commitments.
- Report monitoring results on issues that interest the community.
- Use the opportunity to communicate the benefits generated by your company.
- Translate information into local languages and easily understandable formats.
- Try to maintain continuity in who deals with the community.
- Involve your employees as communication links to the community.
- Consider conducting a stakeholder survey to learn how your company is perceived.

You can also decide to report back to the wider public on your progress in meeting your commitments to avoid, reduce and mitigate any negative environmental or social impacts from your company's activities. Sustainability reporting initiatives, guidelines, including sector-specific guidelines, and good practices are also rapidly emerging in this area. The most notable is the Global Reporting Initiative (GRI).



Look at the Toolkit item **Reporting to Affected Communities** for examples of formats and venues you can use.

5

4

3

2

1

0

Monitoring and Review

5

Robust system of continual learning and improvement. Senior management receives periodic reports about E&S performance and progress toward E&S objectives and targets. All key project decisions consider E&S.

4

Monitoring, supervising and auditing activities are integrated and included in management review. Includes consultation with workers, customers and suppliers. E&S objectives and targets are included in job descriptions and performance reviews.

3

Routine review of monitoring and supervision activities, including participation of workers. Corrective actions routinely implemented. An E&S internal audit plan is in place.

2

Key E&S monitoring plans in place, with inspection and supervision activities. Primarily reactive and guided by external experts, customers and investors.

1

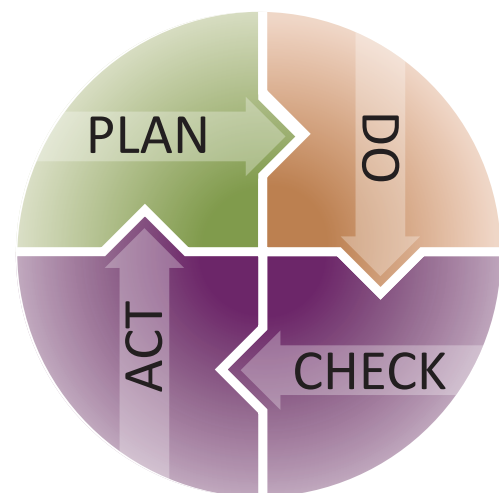
Few monitoring plans to satisfy regulatory requirements. No formal review activities. No systems awareness or repeatable processes

0

No monitoring of E&S performance.

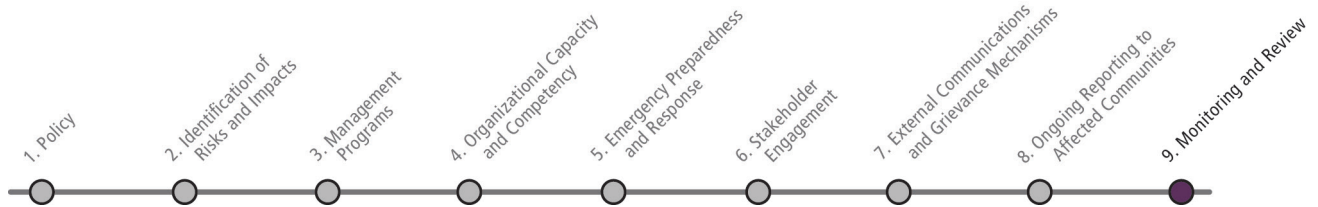
We've talked about the relationship between your ESMS and the Plan-Do-Check-Act cycle of continual improvement. Monitoring and review are critical, because this is how you check and adjust the system.

So far, you've formed or assigned a team to lead the effort. You have developed your ESMS and started to implement your action plans in response to the risks and impacts you identified. You've started to train people. The next step is to monitor the effectiveness of your ESMS and your action plans and make the necessary adjustments.



Monitoring is the **CHECK** step of the PDCA cycle

Review is the **ACT** step of the PDCA cycle

**TIP****Monitoring measures intent, implementation and effectiveness****Intent:**

1. Are the nine elements of the ESMS in place?

Implementation:

2. Are the action plans being carried out?
3. Are procedures being followed?

Effectiveness:

4. Are you in compliance with laws and regulations?
5. Are you making progress toward your overall objectives and targets?
6. How is the environmental and social performance of the company in general?

INDICATORS

A key aspect of monitoring is defining relevant indicators. These are quantitative or qualitative measures of progress against set goals. Some indicators might focus on **performance**, evaluated against the criteria defined in your environmental and social policy.

Some examples of key performance indicators could be:

- energy consumption;
- volume of solid waste disposal;
- water consumption;
- liquid effluents discharge;
- emissions to air;
- noise and vibration levels;
- work zone air quality;
- accidents (injuries, ill-health, property damage), incidents and near misses;
- lost work time injury frequency, incidence, and severity rates
- emergency response incidents;
- average working hours and wages paid;
- wage levels;
- incidences of child labor;
- incidences of disciplinary and discrimination complaints; and
- employee demographics matching access to training, jobs, and wages.

Measuring and Improving
Remember, you can't improve what you don't measure.

You can also use this information when reporting to a wider public on your ESMS performance. When selecting your key performance indicators, you may refer to voluntary guidelines such as the Global Reporting Initiative, which provides a list of indicators for various industries.

Other indicators can look at the **processes or inputs** that you use to try to achieve performance.

For example, in your action plan, you might have included worker training as a necessary step to raise awareness among workers about OHS, so that they can help to identify and address key risks and hazards. In this case, you might evaluate your progress against the action plan by tracking the percentage of workers who have been trained, or the percentage of workers who can correctly describe the risk analysis procedure.

Some examples of process indicators include:

- procedures in place for chemical, fuel and hazardous waste handling, storage, and disposal;
- processes analyzing the efficient use of energy and materials;
- percentage of workers who can explain the grievance mechanism;
- percentage of workers who can explain the health and safety procedures;
- percentage of workers trained on labor standards requirements; and
- communications from stakeholders.

It is helpful to have a mix of performance and process indicators, to get a deeper understanding of whether you are measuring the appropriate things and whether you are taking the appropriate actions. For example, a performance indicator such as “zero incidences of child labor” does not tell the full story: Was this the result of effective procedures and training or was the system inadequate in identifying and recording incidences?

For environmental and OHS performance indicators and benchmarks relevant to your industry, consult the *WBG EHS Guidelines* at www.ifc.org/sustainability



Look at the **Monitoring Plans** in the Toolkit for more examples of key indicators common in the metal products manufacturing industry

THE BASICS OF MONITORING

Visual observation

physical walk-throughs of your facility and surrounding land. Examples of what you might observe: slip, trip, and fall hazards, improperly guarded machinery, warning signs, fire detection, alarm and fighting equipment, use of PPE, storage of hazardous materials, waste segregation and treatment, facility ambient temperature, raised platforms, worker and manager body language and interactions.

Interviews

consultations with workers, managers and external stakeholders. Examples of topics you might discuss: Do workers and managers understand the policies and procedures? How are they impacted? Are there ideas for improvement? Do workers feel comfortable filing complaints? How are external stakeholders impacted by the company? Are there ideas for improvement? Do external stakeholders feel comfortable filing complaints?

Measuring and testing

checking using equipment that is properly calibrated. Examples of what you might check: air emissions, wastewater quality, concentration of airborne metal fines, noise levels, quality of drinking water.

Document review

looking through documents and records. Examples of what you might review: business permits and licenses, energy and water bills, health and safety plan, OHS records, OHS corrective actions plans and status of corrective actions, equipment maintenance logs, inspection records, complaint logs, wage slips, time cards, policies and procedures, training records.



Look at the Toolkit item **Auditing Guidance** for guidelines on how to conduct an audit.

Monitoring and **auditing** are words that are often used interchangeably, which can be confusing. Auditing is a formal, on-site evaluation against a specific set of criteria. Audits can be conducted internally by your own staff or by outside parties. Monitoring is an umbrella term that includes various methods for evaluating performance. These may include: visual observation, measuring and testing, questionnaires, surveys, interviews with employees and external stakeholders, and document review. It is important to design your monitoring program to obtain qualitative and quantitative information. It is also important that workers and managers are monitoring the workplace on an on going basis.

MEASURING AND IMPROVING YOUR ESMS

While your Action Plan monitoring looks at whether corrective actions are being implemented and are achieving the intended results, your ESMS monitoring is looking at the maturity of your system development and implementation. The Action Plan lists new actions you are taking to address risks. But for the new actions to be sustainable, you also need to improve your ESMS. The two need to be linked.

This Handbook's companion publication ESMS Self-Assessment and Improvement Guide provides you with a practical tool to monitor the maturity of your ESMS. For each of the nine ESMS elements, we provide self-assessment questions that show you the level of your ESMS development and implementation on a scale of 0 to 5 (5 is the highest). Conducting the ESMS self-assessment is an important first step that enables you to see where you stand now. The results form the basis of your ESMS Improvement Plan. The ESMS self-assessment responses should be based on Visual Observation, Measuring or Testing, Document Review and Interviews.

Let's take another look at the nine elements of the ESMS and maturity ratings.

Purpose of Action Plan and ESMS Improvement Plan

Action Plan: specific actions to correct environmental, labor and community problems and remediate negative impacts

ESMS Improvement Plan: steps targeted to continually improve the management system to support activities in the Action Plan

	Policy	Identification of Risks and Impacts	Management Programs	Organizational Capacity and Competency	Emergency Preparedness and Response	Stakeholder Engagement	External Communications and Grievance Mechanisms	Ongoing Reporting to Affected Communities	Monitoring and Review
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								

LINKING YOUR ACTION PLAN AND ESMS IMPROVEMENT PLAN

It is important to understand the link between the Action Plan and the ESMS Improvement Plan. The Action Plan lists specific projects and activities. The ESMS Improvement Plan is about making system improvements needed to support the activities and to make the necessary changes in how the company operates.

Improving environmental and social performance and integrating it into your routine business operations takes time. The improvement plan for your ESMS needs to be practical. It needs to be designed with the understanding that people have their core operating responsibilities in your company. You cannot improve everything at once. The ESMS Team plays the critical role of leading the improvement effort. Prioritizing what to work on first is an important job for the team in coordination with senior management. The ESMS Self-Assessment and Improvement Guide will help you to get started.

CONDUCTING AN EFFECTIVE MANAGEMENT REVIEW

The purpose of the management review is to routinely involve senior management in evaluating the development and implementation of the ESMS. The management review is led by the ESMS Team. In the beginning, we recommend conducting a management review every three to six months. Once the ESMS is well-established, once a year is usually fine. It is important to keep a written record (called minutes) during the meeting of the key topics discussed and the decisions made. The minutes should be kept in a central log.

For the ESMS Team, the management review is an important opportunity to keep senior management involved. Remember, the sustainability of the program requires ongoing commitment from senior management.

Typical Agenda for a Management Review:

- Review progress on Action Plan
- Review progress on ESMS Improvement Plan
- Review compliance with environmental and labor laws and regulations
- Review progress on environmental and social performance
- Discuss possible adjustments in risk assessment
- Prioritize activities for next three, six and 12 months
- Review and approve needed resources by senior management

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