

US EPA ARCHIVE DOCUMENT

Appendix A: Workshop Training for Module 3

EMS Guide Meat Processing

Identifying Environmental Aspects and Impacts

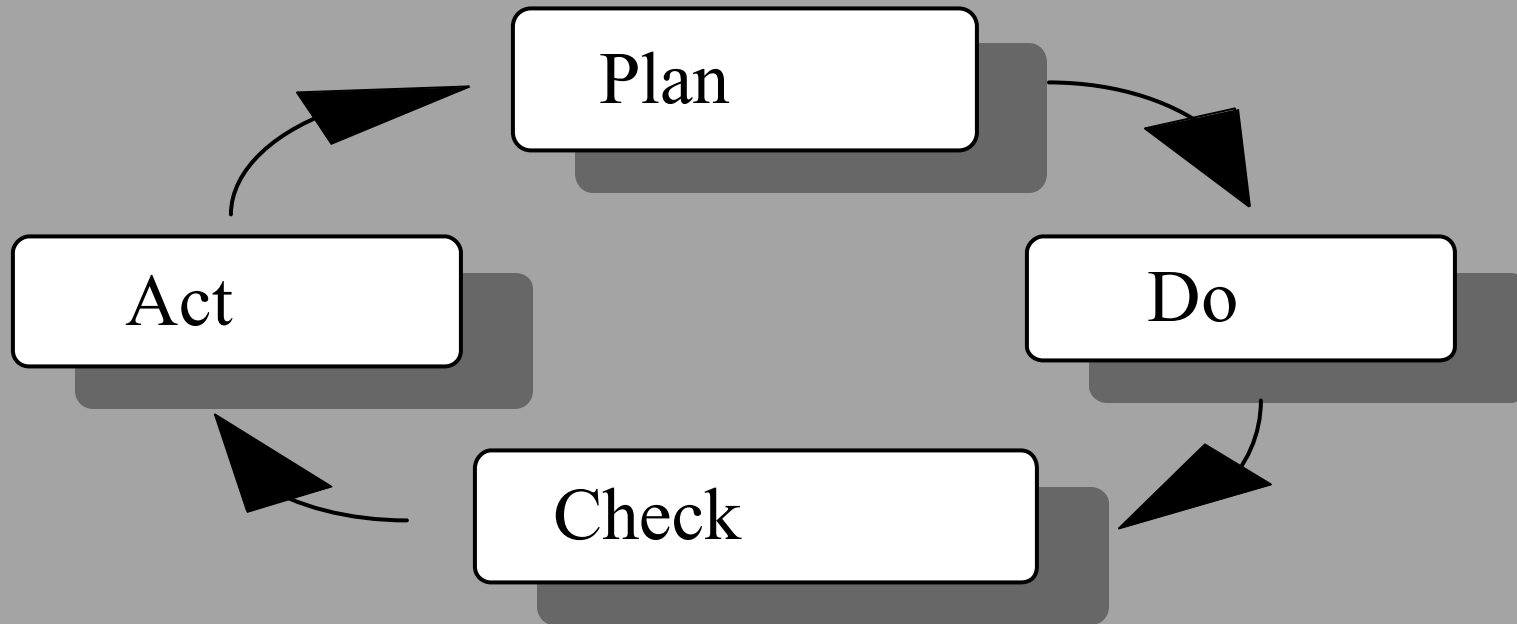


What Are We Doing Today?

- Aspects and Impacts.
- Approach.
- Legal and Other Requirements.
- Homework.



Remember The Context



Relationship Among Environmental Management System Elements



When Identifying Aspects

- Create a list of activities, products, and services - everything that the operating level of the organization does.
- Look outside the box!
- Consider normal and emergency situations.



Aspects and Impacts

- Apply an 80 / 20 rule on the first cut.
- Be sure to keep clear the distinction between aspects and impacts.
- One firm started with an initial list of 1500 aspects!
- Shoot for a final list closer to 20.
- Detail vs simplicity and the how the culture of the company works.

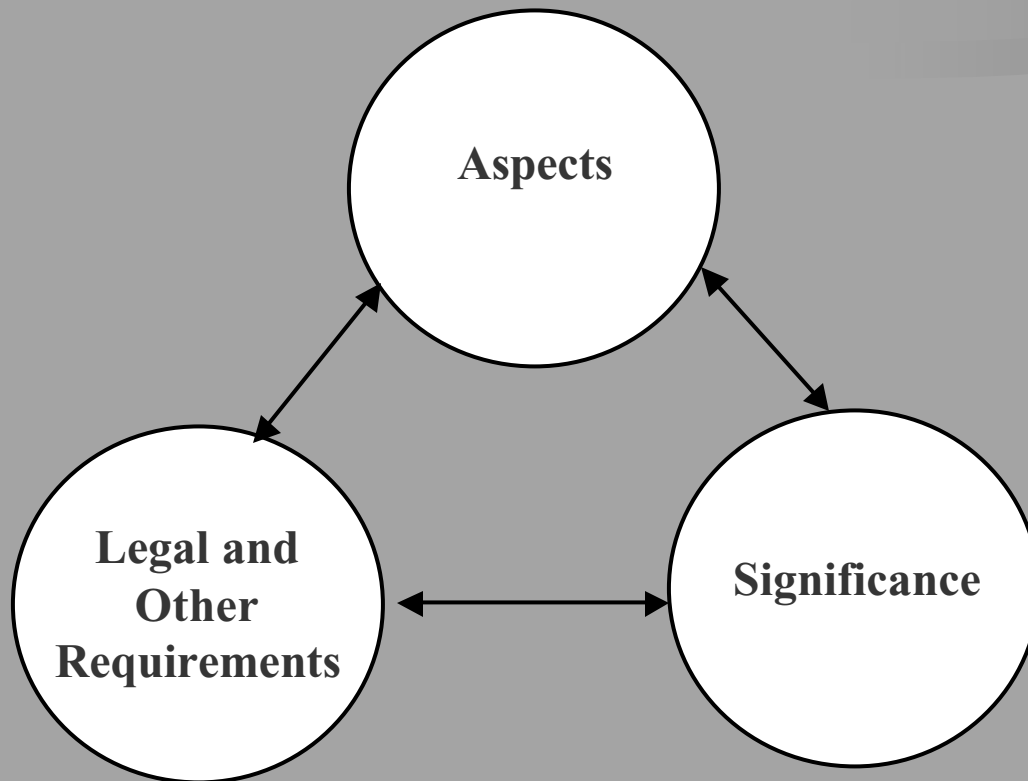


Legal and Other Requirements

- For every aspect or its associated impacts understand regulatory and other commitments in a practical sense.
- Important to understand the law and what it means to different workers.
- Who needs to know what level of detail?
- How to keep this up-to-date?



The Triangle



EMS: Aspects in the EMS

POLICY



ASPECTS



OBJECTIVES AND TARGETS



MANAGEMENT PROGRAMS



OPERATIONAL CONTROLS



Environmental Aspects

- Procedure to identify aspects.
- Activities, products, or services.
- Controllable.
- Within scope of EMS.



Definitions

Environmental aspect - An element of an organization's activities, products, or services that can interact with the environment. Could be beneficial or harmful.

For example: Refrigerant use, wash water discharge, it could involve a discharge, an emission, or consumption or reuse of a material.



Definitions

Environmental impact - Any change to the environment, whether adverse or beneficial, wholly or partly resulting from an organization's activities, products, or services.

For example: Ozone depletion, surface water quality degradation, impacts might include contamination of air or water, depletion of a natural resource or harm to human health.



Definitions

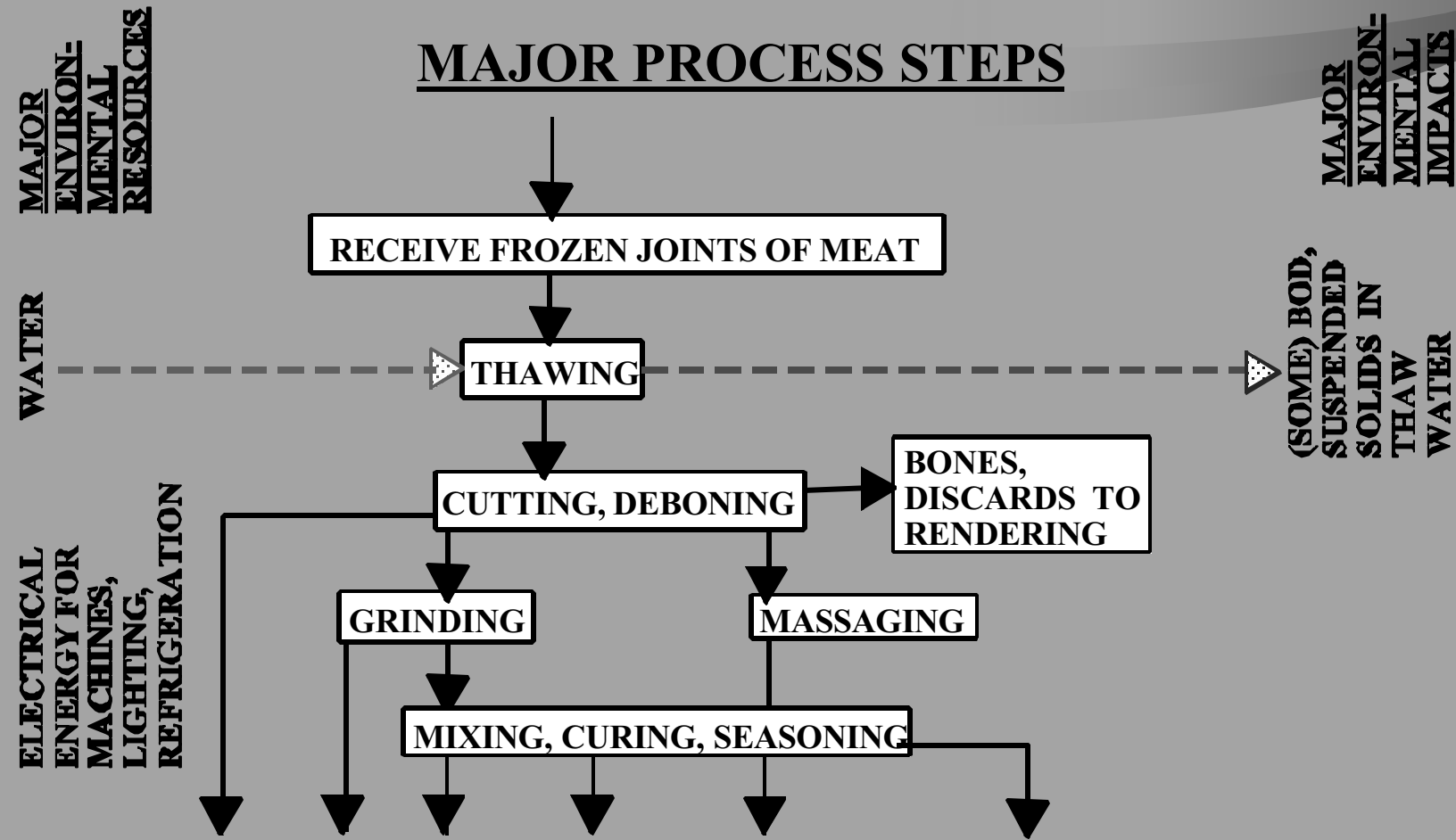
An aspect is a cause of one or more impacts (actual or potential).

Aspect = cause

Impact = effect



Meat Processing Process Steps



Process Flow Diagrams

See Module 3 Figures 3-5 - 3-17 for
Example Process Flow Diagrams



You Have Defined Your Scope By:

- Drawing boundaries around the plant and its components.
- Considering practical constraints and timing.
- Try writing down both what is in the scope and what is not to make it clear.
 - The main plant is in, the contracted trucking fleet is out.
- Your definition will evolve as you work on your EMS and as the EMS matures.

1. Activities, Products, and Services

- Categorize them using existing:
 - organizational process flow descriptions;
 - industry sector descriptions; and
 - product categories.
- Categorize activities and services systematically e.g.
 - Pre-production
 - Production
 - Post-production

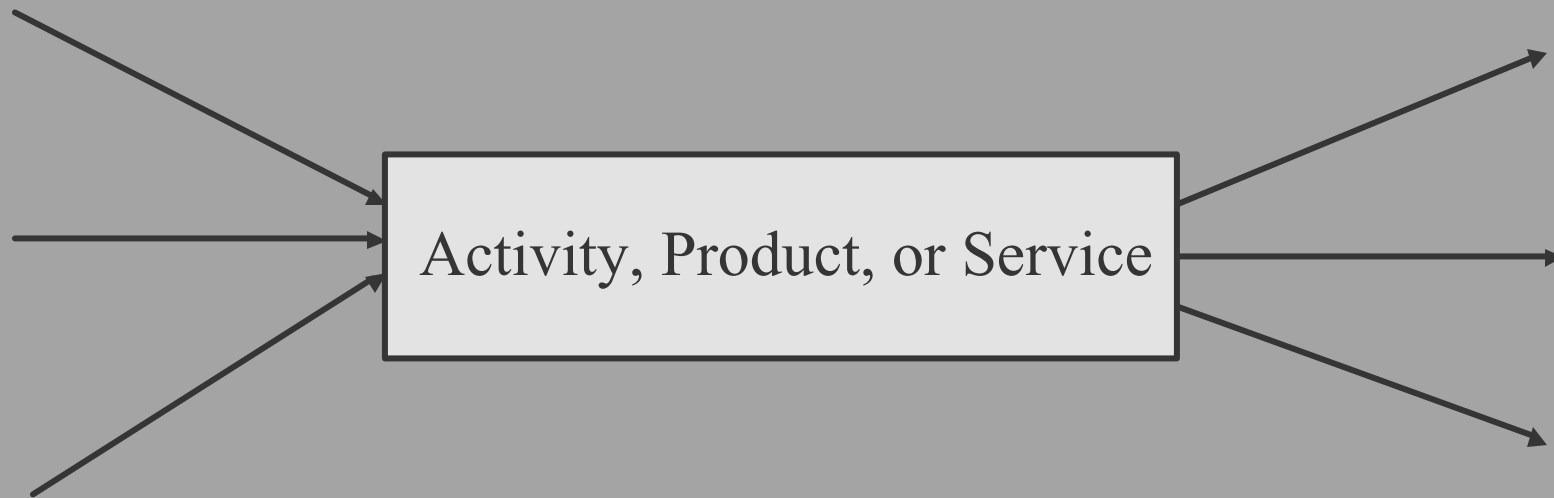
Environmental Aspects

- List all of the inputs and outputs in order to develop a list of which ones have potential environmental consequences.
- Potential (keyword) i.e. consider ‘what ifs’ as well as known events
 - Normal
 - Emergencies



Environmental Aspects

- To develop a list of impacts. Systematically examine what goes into and results from each activity, product, or service.

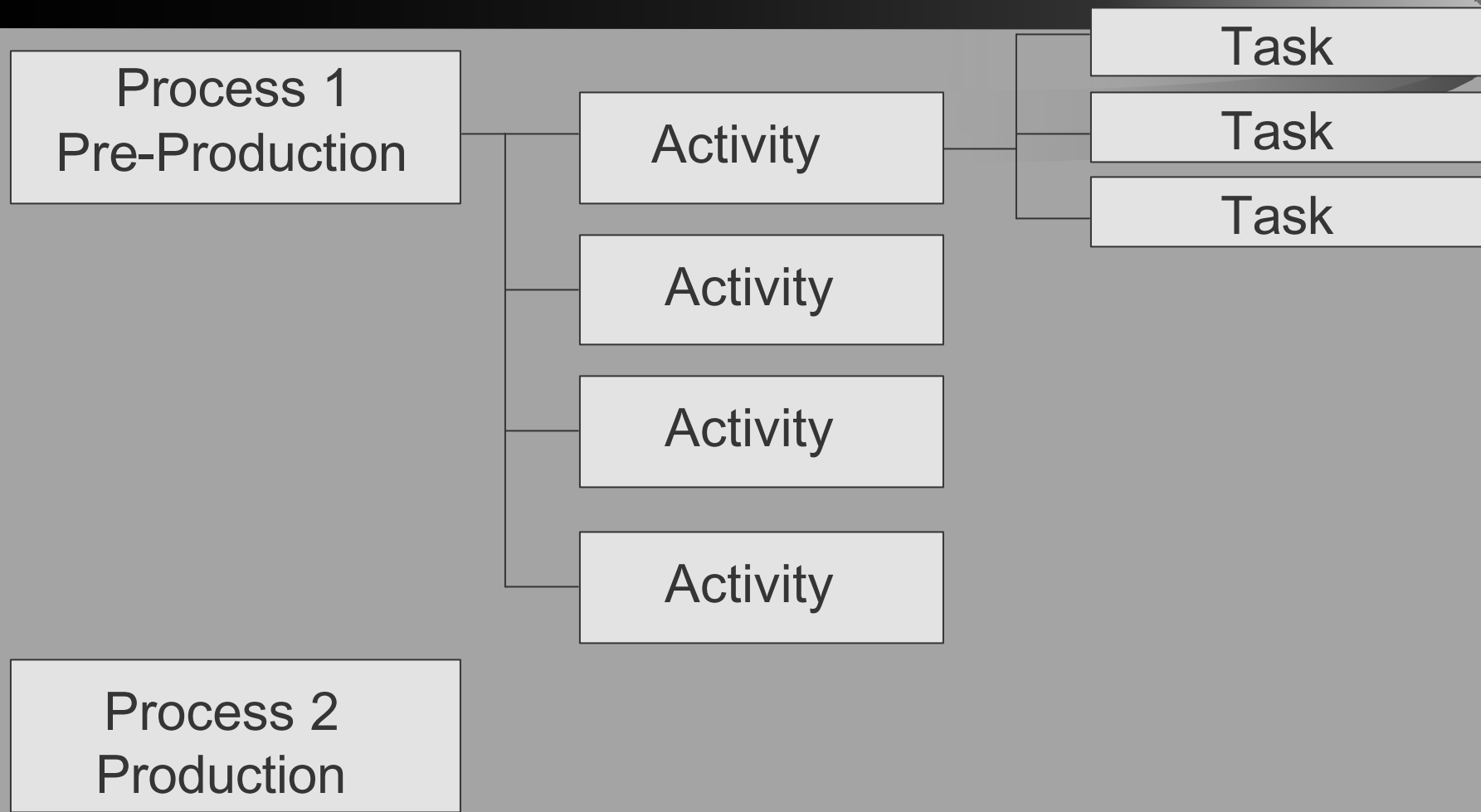


1. Activities, Products, and Services

- Categorize them hierarchically (if necessary), e.g.
 - Major processes,
 - Activities within processes, and
 - Tasks within activities.
- Keep the number of major categories to a minimum, possibly (5 - 10).



Process Flows



Where to Find Aspects

- Employees.
- HACCP.
- Process flow chart.
- Process hazard analysis.
- Emission inventory/risk assessment.
- Safety and hazard reviews.
- Compliance and P2 audits.



Activity 1

Sources for aspect identification at your plant.



A1 Develop a list

- Develop a list of sources of aspect information for your plant.
- HACCP is a start but remember the limits of the scope of HACCP.
- What are the existing information sources and people?
- How will you organize the information?



A1 Tips

- Organize along the lines of business processes and units that are used for regular operation.
- The way you organize now will effect all other parts of your EMS (from programs to corrective actions).



A1 Tips

- When building a list, accept all input and filter later.
- Remember that no one person can know everything that goes on. Expect to find out things you didn't even know happened.
- Remember the 90 /10 rule.
- This is an iterative process (aspect identification through program development).



Keep In Mind Where We Are Going With The System

Aspect	Impact	Legal or Other Requirements	Environmental Significance					Objectives and Targets		Management Program	
			A	B	C	D	Yes / No?	O	T	Timing	Resources



2. Related Environmental Aspects

- Classify aspects by type.
- Be careful not to confuse aspects with impacts - remember that aspects are the controllable cause.
- Determine if there are any aspects in a given class for each activity, product, or service.
- Some aspects will appear more than once because they will have more than one source - it is still a single aspect.

Aspect Types

Emissions to Air

Discharges to Water

Alterations to Land

Waste

Hazardous Waste

Use of Materials (Raw and Processed)

Use of Energy

Noise, Odour, Aesthetics

Common Errors

- The permit requirements are for the major impacts (not always true).
- We have a pollution control device for that so it is no longer an aspect.
- The state has not identified it as an issue.
- Using existing environmental programs to identify aspects.

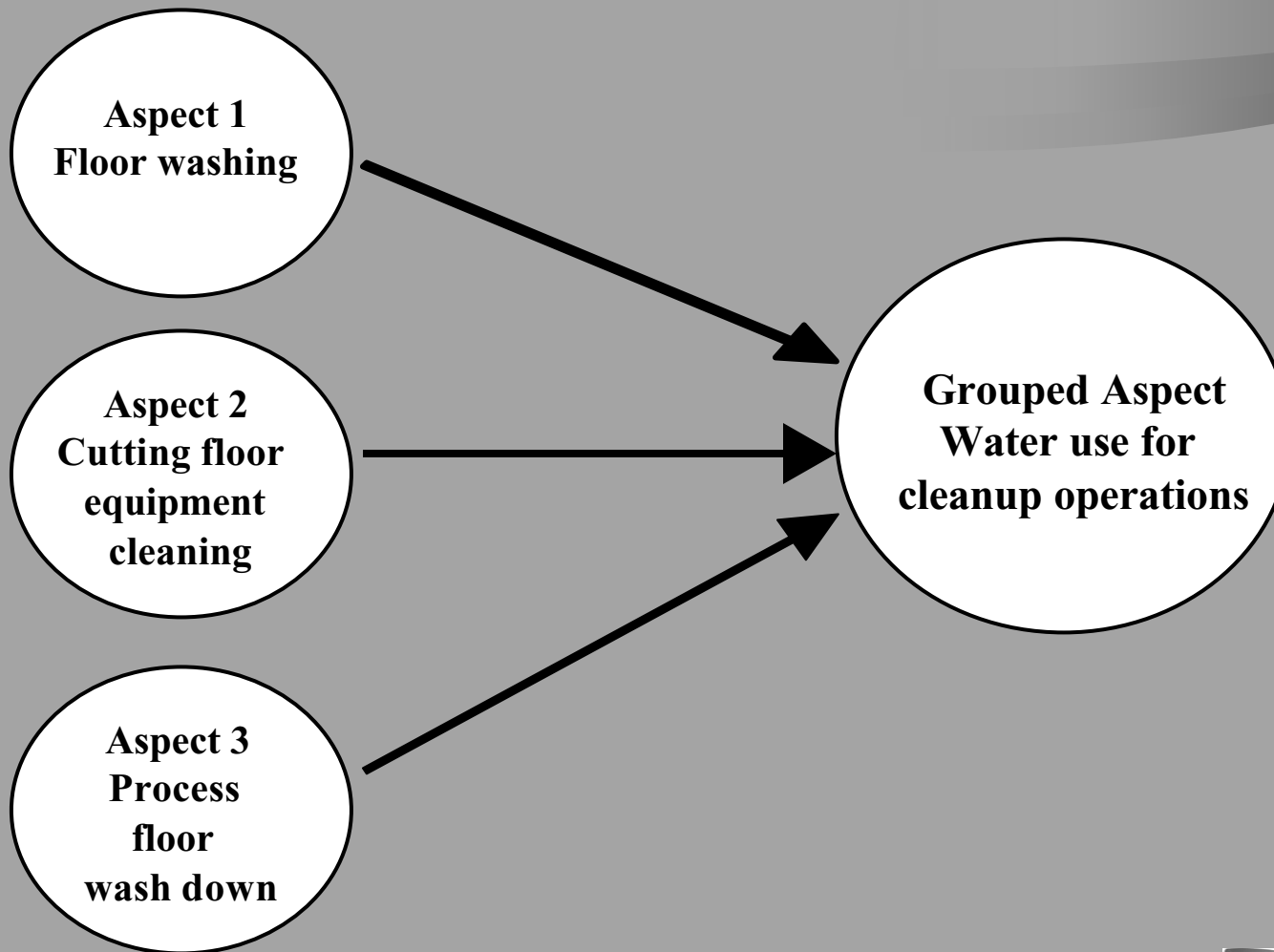


Grouping

- Group aspects to attain manageable units.
- When grouping do not loose the knowledge gained.
- Consider grouping to align with existing programs.



Aspects



Management Control

- Authority to determine how the environmental policy is implemented.
- Authority to allocate appropriate resources.
- Clearly defined boundaries for inputs to and outputs of the organization's activities.
- Interfaces with services not completely within the scope of the EMS (e.g. a common effluent treatment plant).
- The scope of environmental licenses, permits, or approvals.

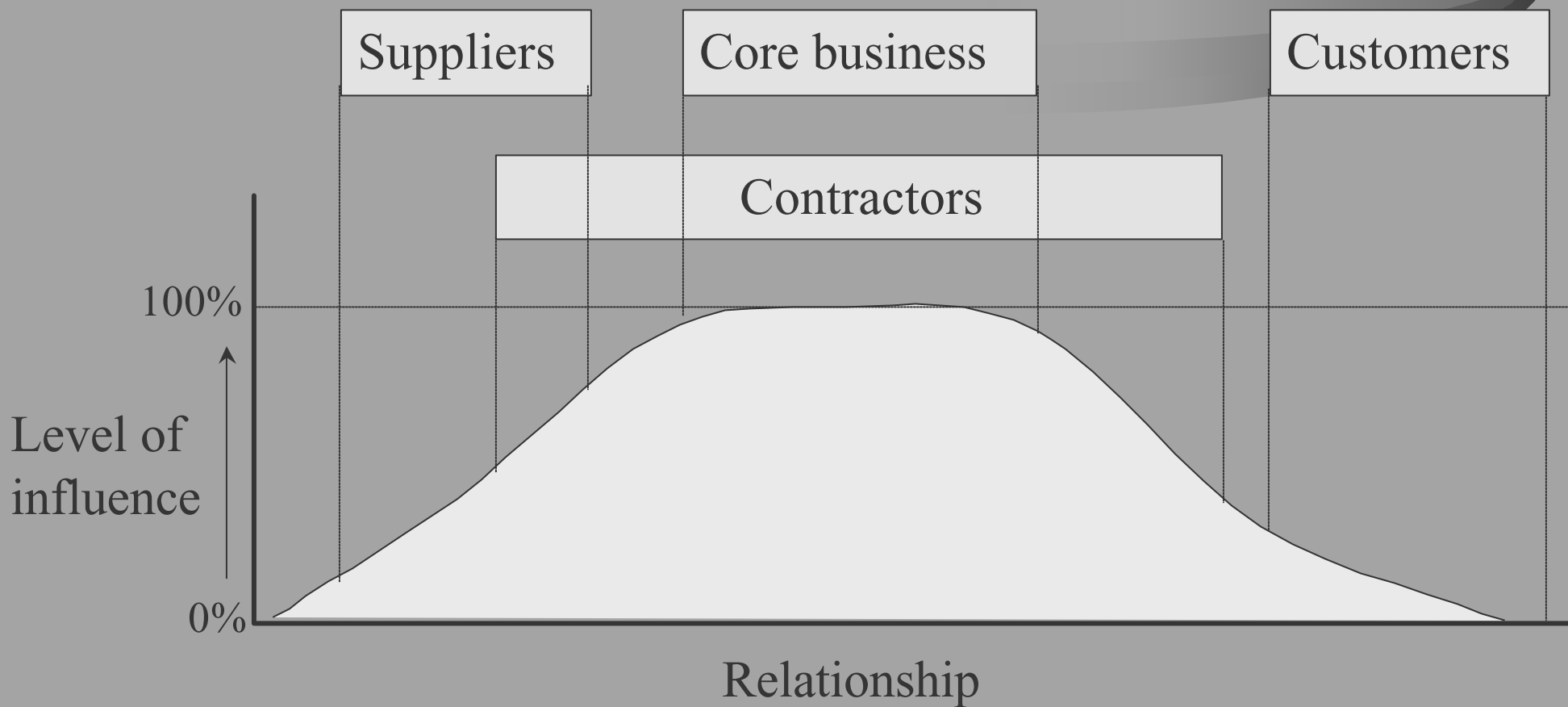


3. Level of Control or Influence

- Determine if it is within the **‘scope’** of your EMS implementation.
- Determine if your organization has **‘management control’** over it.
- If your organization does not have control over it, determine the level of **‘influence’** you have over it.
- Determinations of **‘control’** and **‘influence’** will affect the objectives you set in relation to a given aspect.



Assess Level of Control or Influence



ENVIRONMENTAL ASPECTS IDENTIFICATION

Courtesy Johnson Controls

Plant: _____ Process/Activity: _____
 Contracted? _____ Process/Activity Location: _____

RAW MATERIAL INPUTS

PARTS

CHEMICAL MATERIAL

ENERGY USE:

TYPE:	USAGE		
	High	Medium	Low
Electricity			
Natural Gas			
Propane			
Steam			
Compressed Air			
Hydraulics			

OTHER INPUT:

Provide brief description of process/activity

Optional: Attach and circle photo, schematic, sketch drawing, detailed description

PRODUCT OUTPUTS

AIR EMISSIONS
(include noise & odor)

WASTE (& BYPRODUCTS)
(Solid & Liquid)

Check if Recycled

_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□
_____	□

<u>WATER USE:</u>				<u>WATER DISCHARGES</u>	
TYPE:	USAGE				
	High	Medium	Low		

On site Treatment (Type)

WATER



Aspect Tracking/Identification

Activity, Product, or Service	Input/Output	Environmental Aspect	Grouped Aspect
Contact Person:		Date Completed:	



Aspect, Impact, Legal Identification Form

<u>Activities/Products/Services</u> * Things at your plant that can interact with the environment	<u>Environmental Aspects</u> * Interaction of these things with the environment-beneficial or adverse	<u>Environmental Impacts</u> * Any change in the environment – beneficial or adverse	<u>Legal/Other Requirements</u> * What rules relate to the environmental aspect
Boiler operation	Air emissions that result from the burning of fuel to heat the boiler	Air pollution (from the emission of nitrogen oxides (NOx)).	Clear Air Act (CAA)
Clean-up	Floor washing and clean-up	BOD loading of the POTW	Local POTW sewer ordinance and the POTW's NPDES discharge criteria.



Aspect Procedure

Purpose

In order to understand and manage its actual and potential environmental impacts, ABC Corporation identifies the environmental aspects of its activities, products, and services as they fall within the scope of the EMS.

Procedure

1. Using processing mapping (or input/output flow charts), the EMS committee identifies the basic manufacturing and supporting operations that fall within the scope of the EMS. These are recorded, with supporting material flow diagrams and tables.
2. The EMS coordinator arranges for the environmental aspects of these operations to be identified by a team of several employees from the operation in question, using the process mapping approach where feasible and under the oversight of the EMS coordinator or a committee member where appropriate.
3. Environmental aspects are grouped where appropriate and their actual or potential impacts (quantified to the extent possible), are listed by operation.

Frequency

This procedure is repeated annually to ensure that any new environmental aspects are identified.



Activity 2

Aspects at your plant.



A2 Common Aspects

- What are the non HACCP aspects all pilot plants will have?
- To do this think of the overall business and where money is spent.
- Look for what it takes to operate a plant (beyond the core manufacturing work).



A2 Process Related Aspects

- Look at core processes and sub-processes.
- Process descriptions and flow diagrams in the EMS guide.



4. Environmental Impacts

- Identify the impacts associated with the identified aspects.
- Used to help determine significance and prioritize.
- Information on environmental impacts can be obtained from:
 - Interested parties (stakeholders) - including employees;
 - Product and process literature, studies, and scientific information;
 - Existing impact studies, reviews, and audits;
 - Historical reviews, inspections, and observations; and
 - MSDS'.

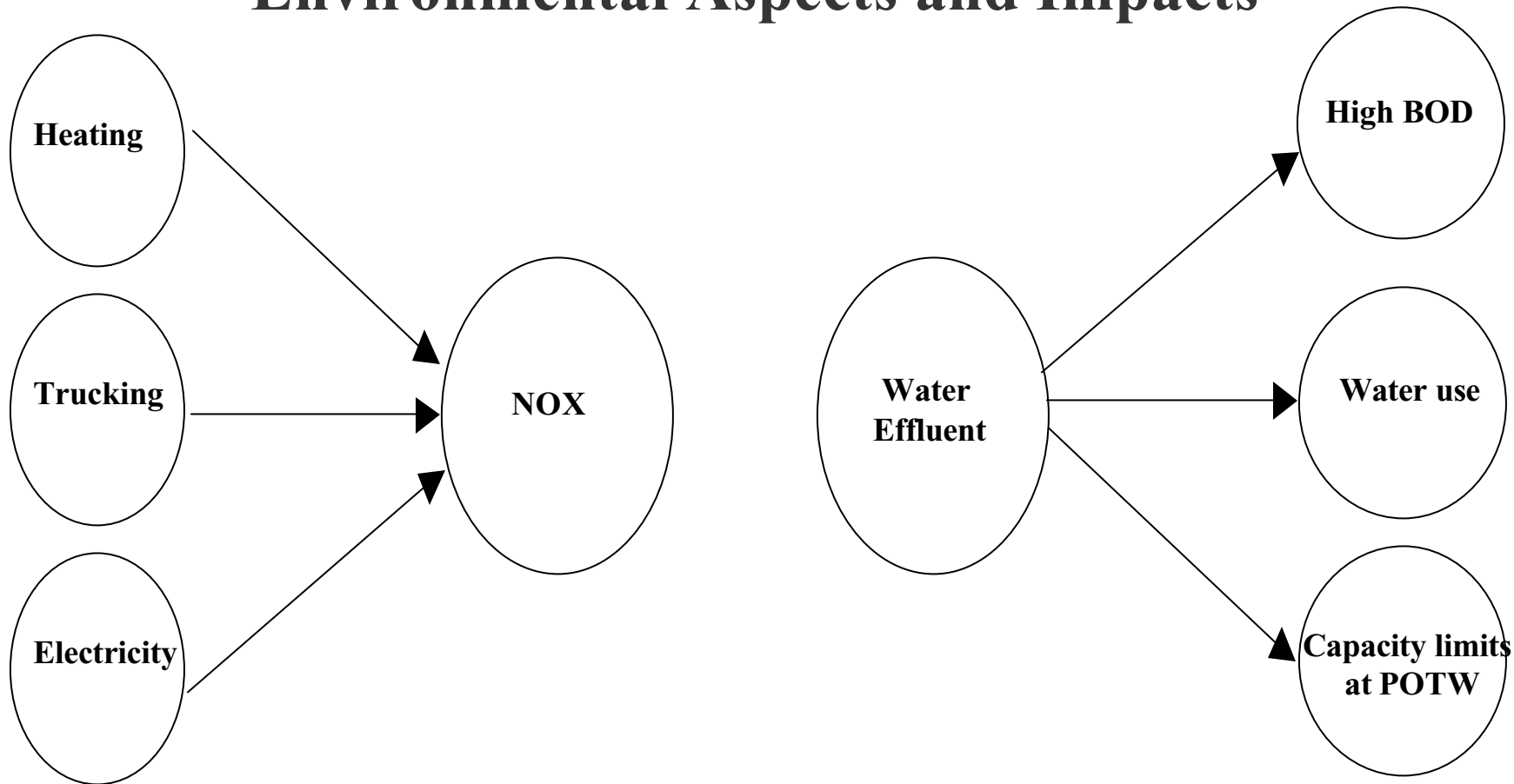


4. Environmental Impacts

- There can be more than one impact associated with a single aspect.
- More than one aspect can contribute to the same impact.
- These relationships should be clear.



Environmental Aspects and Impacts



- Several independent activities can all result in the same overall air emission type

- One aspect may have several impacts

Example

Environmental Aspects	Potential IMPACTS of Each Aspect
BOD and Salt discharged to POTW	Contamination of aquatic habitat and drinking water supply
VOC emissions	Contribution to smog; worker or community exposure to volatile organic compounds (VOCs)
Waste generation	Degradation of land, habitat, water supply
Solid waste generation	Habitat destruction, drinking water contamination from landfills, wasted land resources
Fresh water use	Depletion of natural resources
Electricity use	Contribution of global warming; degradation of air quality by electric generation plants.
Exposure to chemicals during business activities	Harm to health of workers, neighbors, wildlife, or plant life



Activity 3

Impacts



A3 Common Impacts

- For the common aspects from Activity 2:
 - What are the impacts?
 - Are there common impacts that may assist in grouping?
 - Does listing impacts bring any other possible aspects to mind?



Legal Requirements

- Procedure/process to identify legal requirements.
- USEPA.
- US Small Business Administration.
- State Agencies.
- Trade/Industry Associations.
- Internet.



Resources

- Corporate headquarters.
- Commercial services (with updates offered on-line, on CD-ROM or in paper form).
- Regulatory agencies (federal, state, and local).
- Trade groups/associations (www.meatami.com/).
- The Internet (see USEPA web site at www.epa.gov).



Resources

- Public libraries.
- Seminars and courses.
- Newsletters/magazines.
- Consultants and attorneys.
- Customers, vendors, and other companies.



Legal and Other Requirements

- The organization:
 - must have identified all relevant legislation, regulations, and other requirements;
 - this includes the laws of the jurisdiction in which the organization operates and where the product or service is sold; and
 - must have a system in place to manage compliance with these requirements.



Legal and Other Requirements

- **Examples of regulations:**
 - Municipal
 - State
 - Regional
 - Federal
 - International



Legal and Other Requirements

- Regulations exist in several forms:
 - those specific to the activity (operating permits);
 - those specific to the product and service;
 - those specific to industry;
 - general environmental laws; and
 - authorizations, licenses, and permits.



Legal and Other Requirements

- **Examples of other requirements:**
 - internal standards;
 - industry codes of practice;
 - contractual obligations;
 - agreements with public authorities;
 - participation in voluntary programs; and
 - non-regulatory guidelines.



Legal and Other Requirements

- **Legislation-Related Documentation**
 - Procedure to identify relevant legislation, regulation, and other requirements.
 - A register or data source of all applicable legislation, regulations, and other requirements.



Legal and Other Requirements

- **Legislation-Related Documentation**
 - A register includes licenses, permits, approvals, agreements with authorities, and correspondence with licensing authorities.
 - Evidence that this information is available to and has been communicated to relevant people in the organization.



Tips

- Identify legal and other for your aspects. Do not use legal and other as first cut at identification of aspects.
- The impact may be regulated and not the aspect.
- Aspects subject to other requirements may be the ones where the greatest opportunities are for big gains in environmental performance.

Tips

- Building the processes to ensure the right people have access to up-to-date, in plain language(s) legal requirements is a key building block.
 - What are your sources?
 - How will you “distill” into what various staff need to understand?
 - How will you be sure they keep up to date?



Homework

- Determine aspects and impacts.
 - Build list
 - Organize list
 - Understand management and control issues
- Determine legal and other requirements for all aspects.

