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**UNIDO Country Directors  
Environment Workshop:  
*Introduction to the Guidelines  
on Environmental Appraisal***

June 1991

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## **UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP**

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### **Introduction to the Guidelines on Environmental Appraisal**

- 1. Introduction: Environmental Assessment Procedures in the UN System**
- 2. Guidelines: Category A+B Projects**
- 3. Guidelines: Industry Sector Manuals**
- 4. Application to Two Sample UNIDO Projects**

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## UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

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### Background: 1

- Increasing donor concern re. environment
- Growing pressure on donor community
  - to develop environmental strategies
  - to commit resources to environmental assessment (EA) and monitoring

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### Background...2

- Donor responses: 1. Coordination
  - OECD Development Assistance Committee (DAC)
  - CIDIE
  
- Donor responses: 2. New environmental programmes and projects

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- Environment now a major target area for assistance in its own right
- But critical area remains:
  - incorporation of environment into routine programme and project decisions
- Making environment an automatic, integral part of the project cycle

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ERL Study - 1989

"Environmental Assessment Procedures in the UN System"

(Final Report dated April 1990)

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### Specific aims:

- identify activities needing EA
- review existing procedures
- identify common principles, procedures or formats that could be applied by UN agencies to "environmental" decisions

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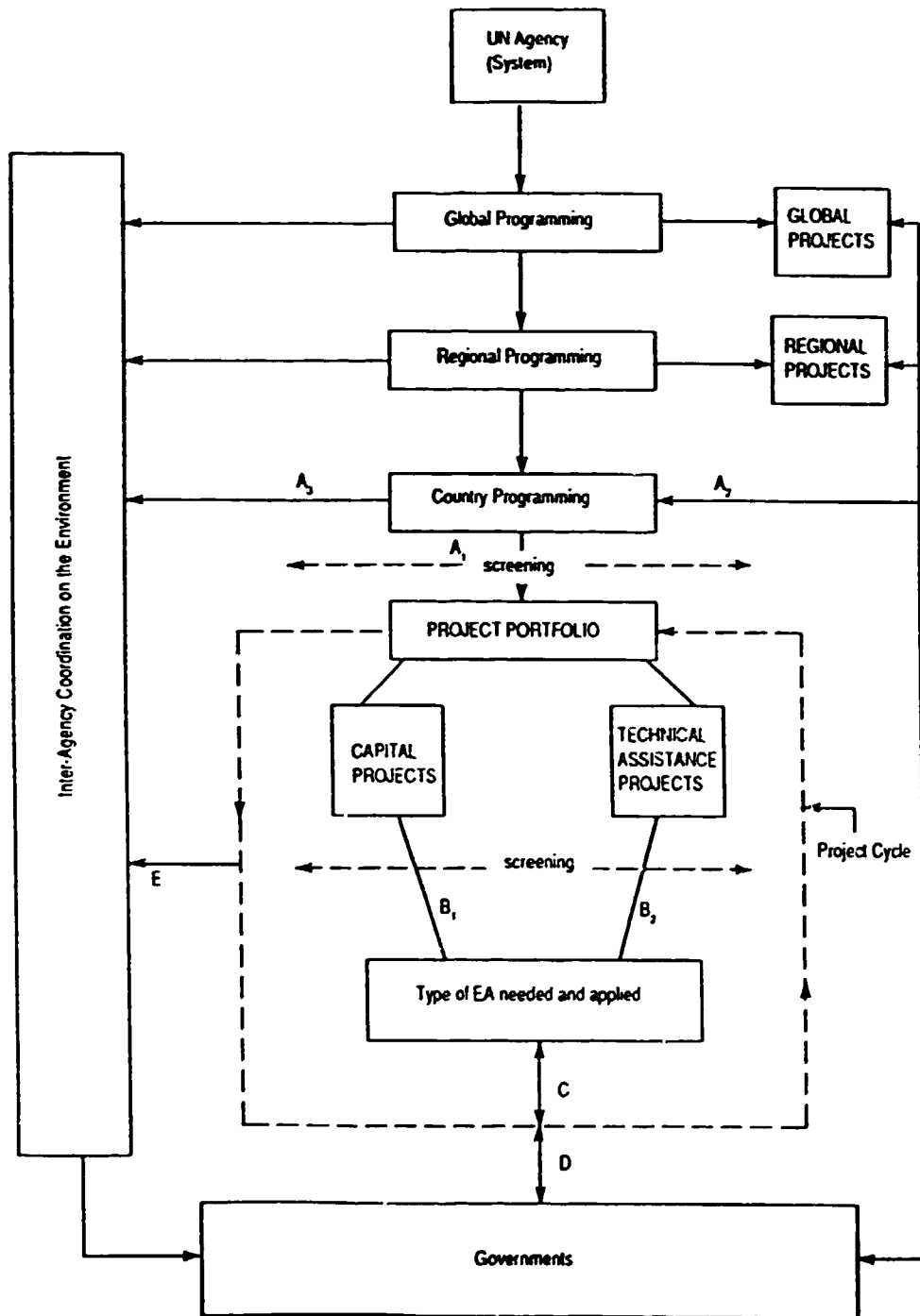
## UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

### Outputs from the study:

- theoretical framework for assessing EA procedures in the UN
- identification of current procedures, and need for change
- "next steps" to incorporate environmental considerations more effectively

# UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

Critical Points For Decision Making on Environmental Dimensions of Development Activities in the UN System



A<sub>1</sub> etc. = Decision Point

## UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

### Terminology:

- EA Procedures - internal decision-making mechanisms
- Procedural Guidelines - how EA done in an organisation
- Technical Guidelines - information on impacts, techniques, etc

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What is an Environmental Impact?

- Change (positive or negative)
- Direct or indirect
- Affects systems that provide natural resources
- Or scientific, cultural or aesthetic value of the natural environment

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**Why EA procedures?**

- **To ensure that renewable and sustainable development systematically taken into account**
- **To avoid "poor" decisions**

**Success depends on design, implementation and staff commitment**

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Procedural guidelines generally:

- Outline analyses required for programming
- Outline project categories and screening criteria/checklists
- Contain checklists and guidelines for impact recognition
- Contain descriptions of EIA techniques/procedures
- Contain lists of key technical guidelines

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### Country level assessment procedures:

- To increase quality of country level analysis
- Progressive incorporation of analysis into screening process

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### Project level assessment procedures:

- Projects normally requiring EA
- Projects where more limited EA appropriate
- Projects where EA not normally necessary
- Projects not requiring separate EA

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EA procedures should identify:

- Decision-making points and tasks at each point
- Responsibility for tasks
- How to perform task
- Documentation
- Accountability

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The UN system:

- Complex and diverse - over 30 agencies and programmes
- Carrying out a range of different functions

How do they address environmental issues and concerns in their activities?

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## The Spectrum of UN Agencies

Capital                      Technical Assistance                      Info/Monitoring

World Bank

IFAD  
UNDP  
WFP

FAO  
UNIDO

DTCD  
UNCHS  
ILO

WHO

IAEA  
UNFPA

UNEP  
IMO

WMO

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Types of UN project:

- Capital
- TA
- Information and monitoring
- Environmental

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## PROJECT TYPES, ENVIRONMENTAL ASSESSMENT AIMS AND MECHANISMS

### Types of Project

- industry
- infrastructure
- agriculture
- energy
- natural resources
- pilot projects

### Technical Assistance

- project identification
- feasibility studies
- technical advice
- institutional strengthening

### Training

### Information & Monitoring

### Research

### Aims of EA

Ensure minimal net negative impact

Incorporate positive elements where possible

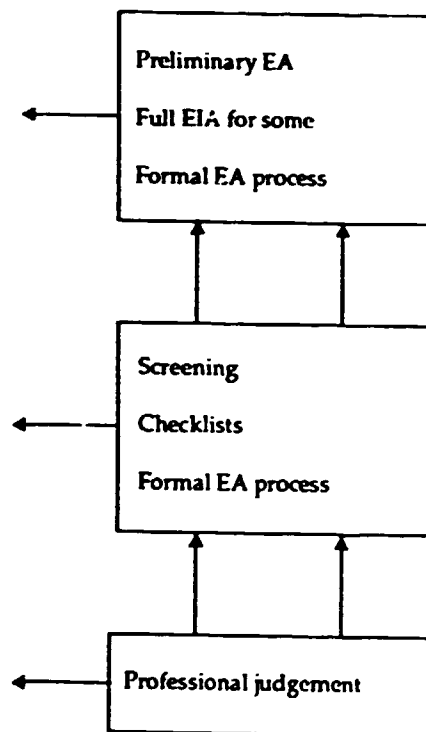
Early identification of potential problems and options

Early identification of opportunities for environmental enhancement

Maximise potential opportunities for environmental benefits

Ensure early awareness of potential problems

### Key Procedural Mechanisms



## UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

Key characteristics of "typical" UN project:

- Focussed on economic and social development, so great majority affect the environment in some way
- World Bank aside, most UN projects are non-capital
- No clear screening methodology for developing EA procedures

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ERL's study surveyed key EA parameters:

- Proportion of capital projects
- Types of EA procedures used
- Environmental staffing
- Internal environmental training

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## UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

Three categories of agency:

- Those with rigorous, systematic procedures
- Those using ad hoc procedures
- Those not using EA



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### Agencies with rigorous, systematic procedures

- World Bank only
- Formal EA process integrated into project cycle (though still in the trial period - OD 4.0 just approved and published)
- Task Managers fully responsible for environmental aspects of projects

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## UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

### Agencies using ad hoc procedures:

- Those developing more systematic procedures (eg UNDP, ILO, UNIDO)
- Those deliberately keeping ad hoc approach - eg WFP
- Those as yet undecided (eg WHO, UNCHS, IMO, UNFPA)

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Agencies not using EA:

- Those with no capital or TA projects (eg UNCTAD, WFC)

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UNDP's special role:

- Funds 50-70% of development project activities of major specialised UN agencies
- Project and Procedures Manual - "Bible" of the UN system
- But currently only has systematic procedures for large projects
- Draft environmental procedures (1987) scrapped

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### Coordination between UN agencies:

- Little coordination re. EA of projects
- Agencies are sector-specific (eg ILO for workplace, WHO for health)
- No mechanisms to apply unified set of criteria (which could cover impacts on workplace, health.....)

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### Existing procedures - summary....1

- Little "hard" evidence on impacts of UN projects - anecdotes
- Where projects reviewed, environmental worries are expressed
- Known environmentally negative projects - capital and TA
- Scope for adding environmentally beneficial components to many projects

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### Existing procedures - summary....2

- Introducing - or improving - guidance would help operational/environmental staff, particularly for TA projects
- No universal agreement on the best form of guidance:
  - procedures vs. "enabling mechanisms"
- Both have an important part to play

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## UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

To develop improved EA procedures:

- Screening project categorisation must be clear
- Procedures must be simple
- Constraints to change must be recognised
  - internal constraints
  - external constraints

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## **UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP**

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**Appropriate EA procedures in the UN system should:**

- **Clearly define environmental impacts or implications**
- **Clearly define categories and screening processes**
- **Clearly identify responsibilities/decision points/accountability**
- **Be fully integrated into existing procedures**

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Appropriate EA procedures in the UN system should  
(continued):

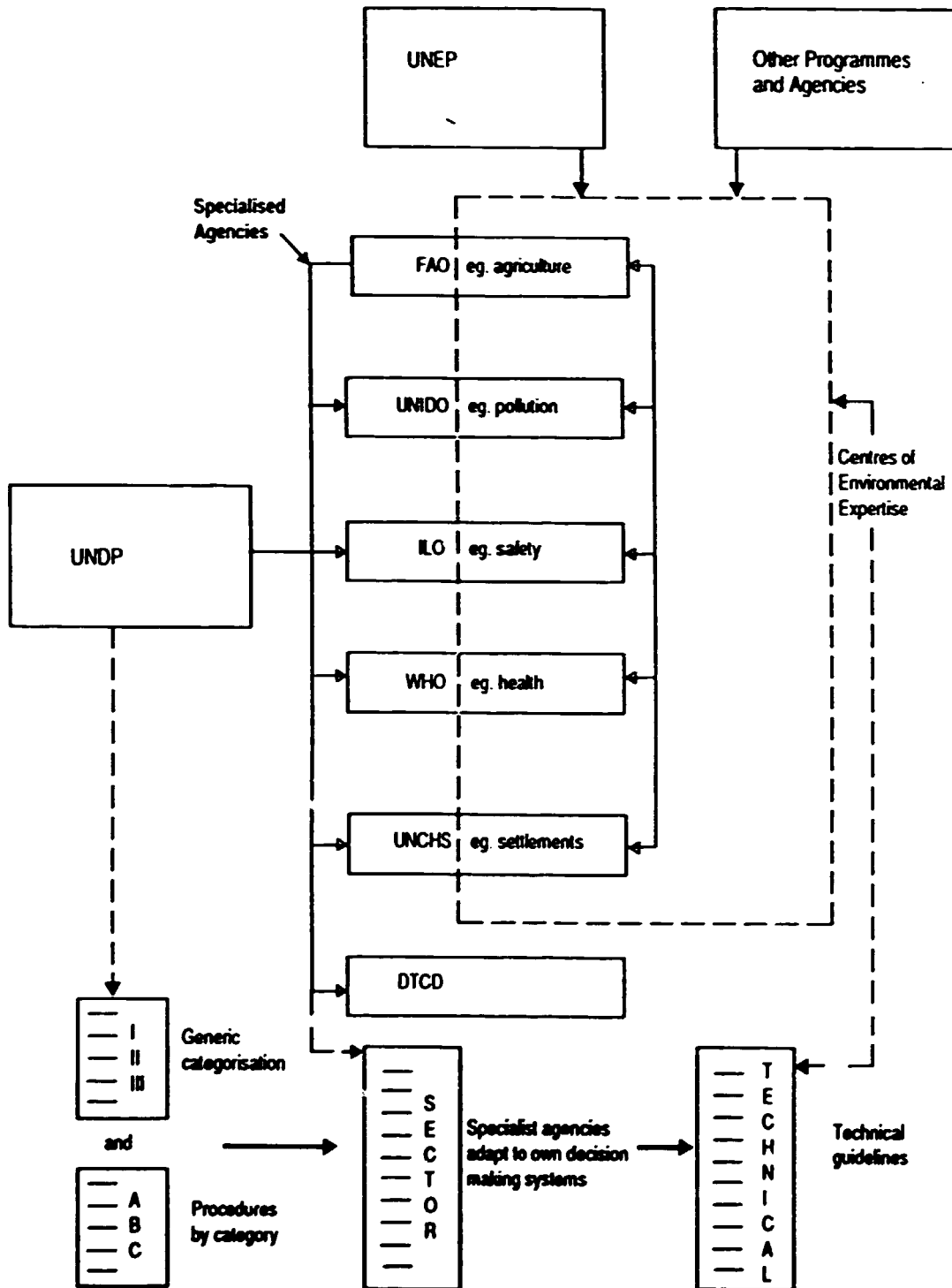
- Be practical and make minimal demands for extra resources
- Be simple, flexible and easily understood
- Be adaptable to the decision-making processes of different UN agencies

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## How EA Procedures Might Operate in the UN System



## UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

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Having established the principles, how do we implement in individual agencies?

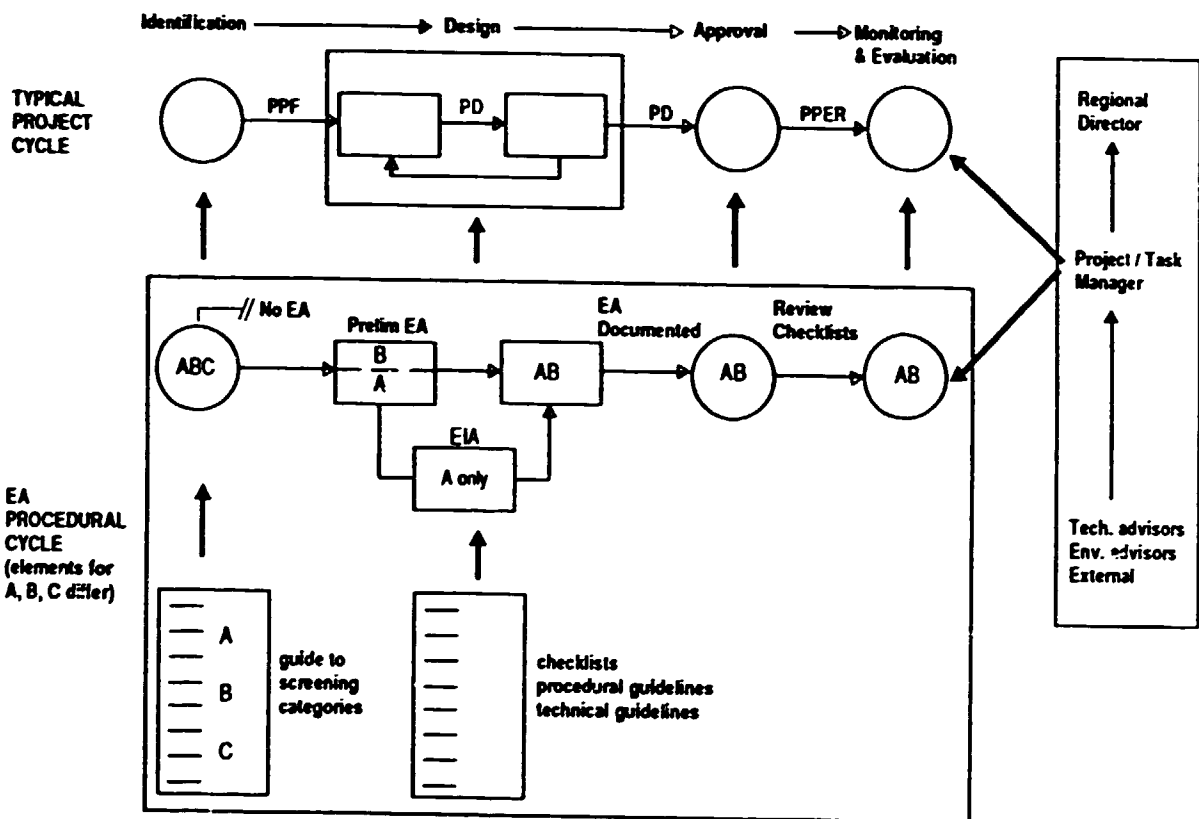
- What mechanisms?
- How do we fit EA procedures to the project cycle?
- How do we implement?

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## Integration of EA Procedures Into Project Decision Making



## UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

### Guidelines for Environmental Appraisal - 1990

- Commissioned by UNIDO Project Appraisal Section
- Prepared by ERL

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### Objectives:

- To provide guidance to Backstopping and AREA officers in introducing environmental considerations into projects
- To help APP assess whether appropriate environmental measures have been included
  - can the project proceed as designed?
- Coverage of different project types/industrial sectors

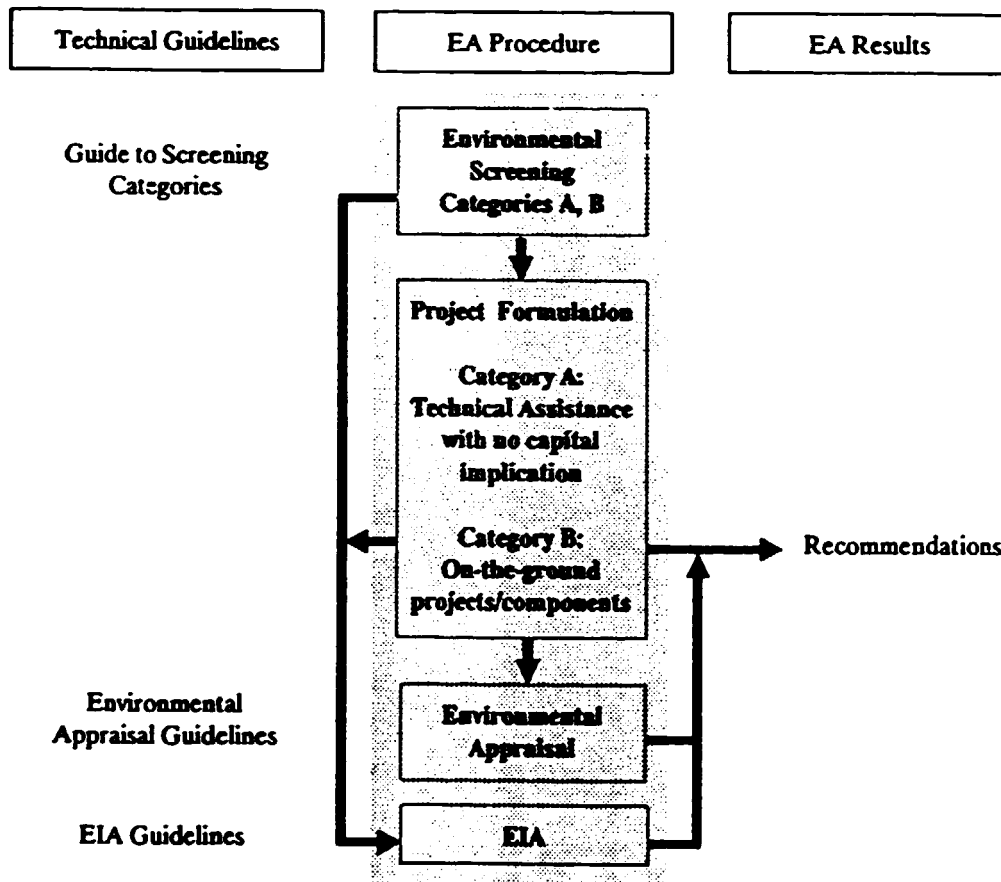
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## Procedure for Environmental Appraisal in UNIDO





## **UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP**

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Screening of projects/programmes - two major categories:

A TA projects with no capital implications

- environmental awareness
- technical and institutional capabilities

B Projects with primary or secondary environmental impacts

- measures for environmental management and pollution control

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## UNIDO Primary Functions

	<i>Primary Functions for General Application</i>
DS	Direct Support
PF	Project Formulation
PA	Preparatory Assistance
	<i>Information</i>
SEM	Workshops/Seminars
	<i>Education and Training</i>
TRNG	Group/Direct Training
FELL	Fellowships
ST	Study Tours
IB	Institution Building
PIL	Pilot Plant

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## Categorisation of UNIDO Programmes and Projects

	Industrial Areas	Screening Categories
HRD	Human Resource Development	A
WOM	Integration of Women in Industry	A
SEC	Sector and Sub-sector Development Planning	A
ECDC	Economic Cooperation between Developing Countries	A
STRAT	Global Industrial Strategies and Policies	A
INFR	Institutional Infrastructure	A
MGMT	Industrial Management	A
PLAN	Industrial Planning and Strategies	A
FIN	Mobilisation of Financial Resources	A or B
DTT	Development and Transfer of Technologies	A or B
QC	Quality Control	A or B
ENT	Enterprise to Enterprise	A or B
PRIV	Private Sector	A or B
RUR	Rural Area/Rural Development	A or B
TCDC	Technical Cooperation between Developing Countries	A or B
ENER	Energy	B
ENV	Environmental Protection and Pollution Control	B
FEAS	Pre-feasibility and Feasibility Studies	B
REH	Industrial Rehabilitation	B
MTN	Industrial Maintenance	B
SMI	Small and Medium-Scale Industry	B

## UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

Category A projects:

- No capital implications - so no direct environmental impacts

But

- Important to ensure that opportunities to introduce environmental concepts and skills considered

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## Environmental Appraisal of Category A Projects

### The programme or project

- What are the proposed objectives?
- What are the proposed outputs?

### The institution targeted for technical assistance

- What kind of institution or organization is it?

### The environmental considerations

- What environmental inputs are being introduced?
- What additional inputs can be recommended?

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### Category B projects:

- Impacts
- Receptors
- Mitigation/management measures

Should be readily identifiable, so most projects will be dealt with at project formulation

- Full EIA only in exceptional circumstances

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## **Environmental Appraisal of Category B Projects**

### **Sources of impact**

- What kind of programme/project is proposed?
- What is the type of process used?
- How big is it?

### **Receptors of impact**

- What is the nature of the site?
- How sensitive are the surroundings?

### **Environmental impacts**

- What environmental impacts can be expected?
- How significant are the impacts?

### **Environmental measures**

- What measures are being/will be implemented?
- What additional measures are recommended?
- How much are they likely to cost?

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Category A and B projects - steps in the appraisal process

### 1 Screening

Does the project have capital implications?

- construction or expansion of industrial plant
- process modification
- introduction of waste management facilities (including treatment plants, disposal sites, laboratories)

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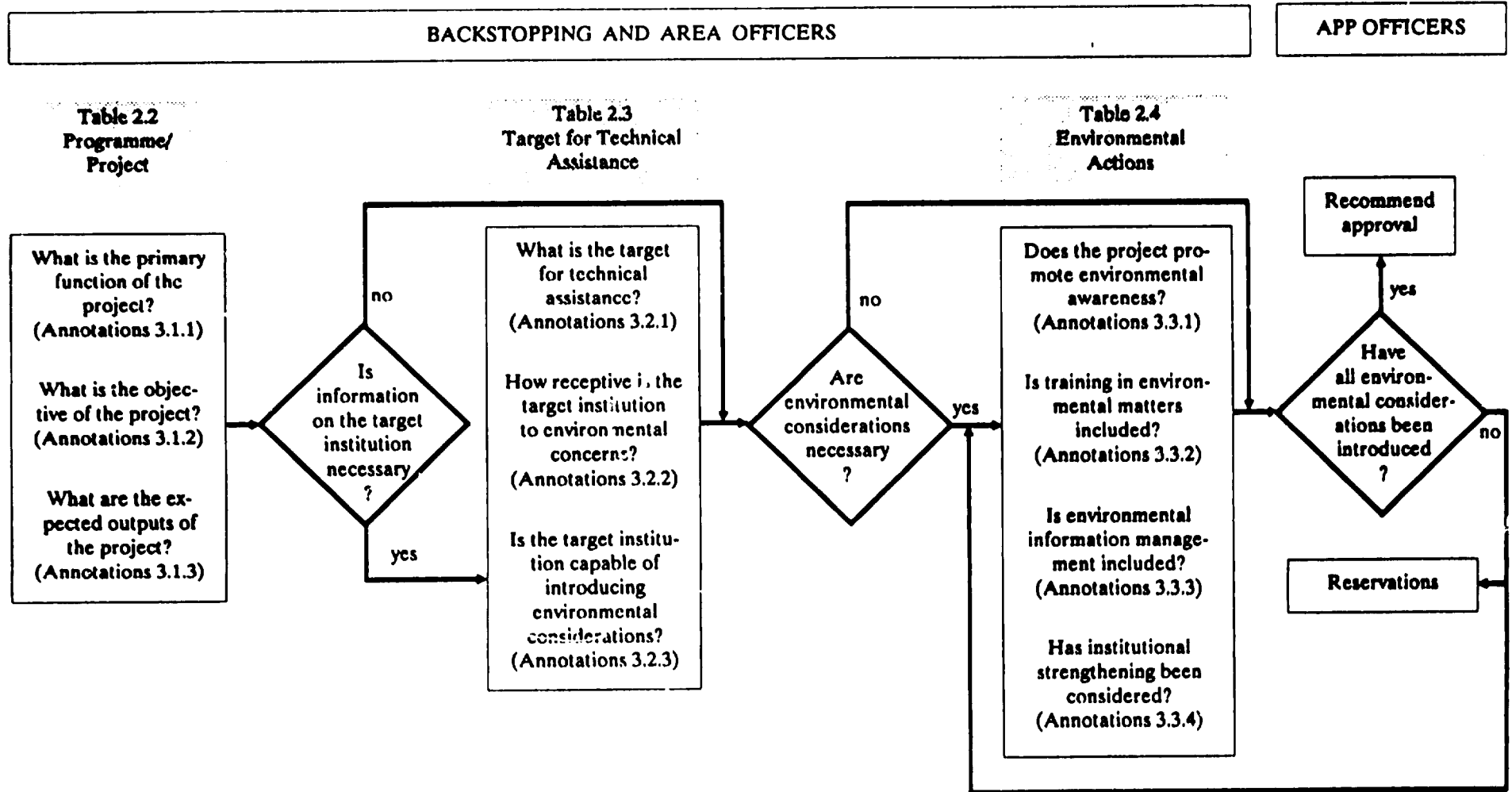
Category A and B projects - steps in the appraisal process

- 2 Filling in tables
- 3 Using the annotations
- 4 The project document
- 5 The APP appraisal

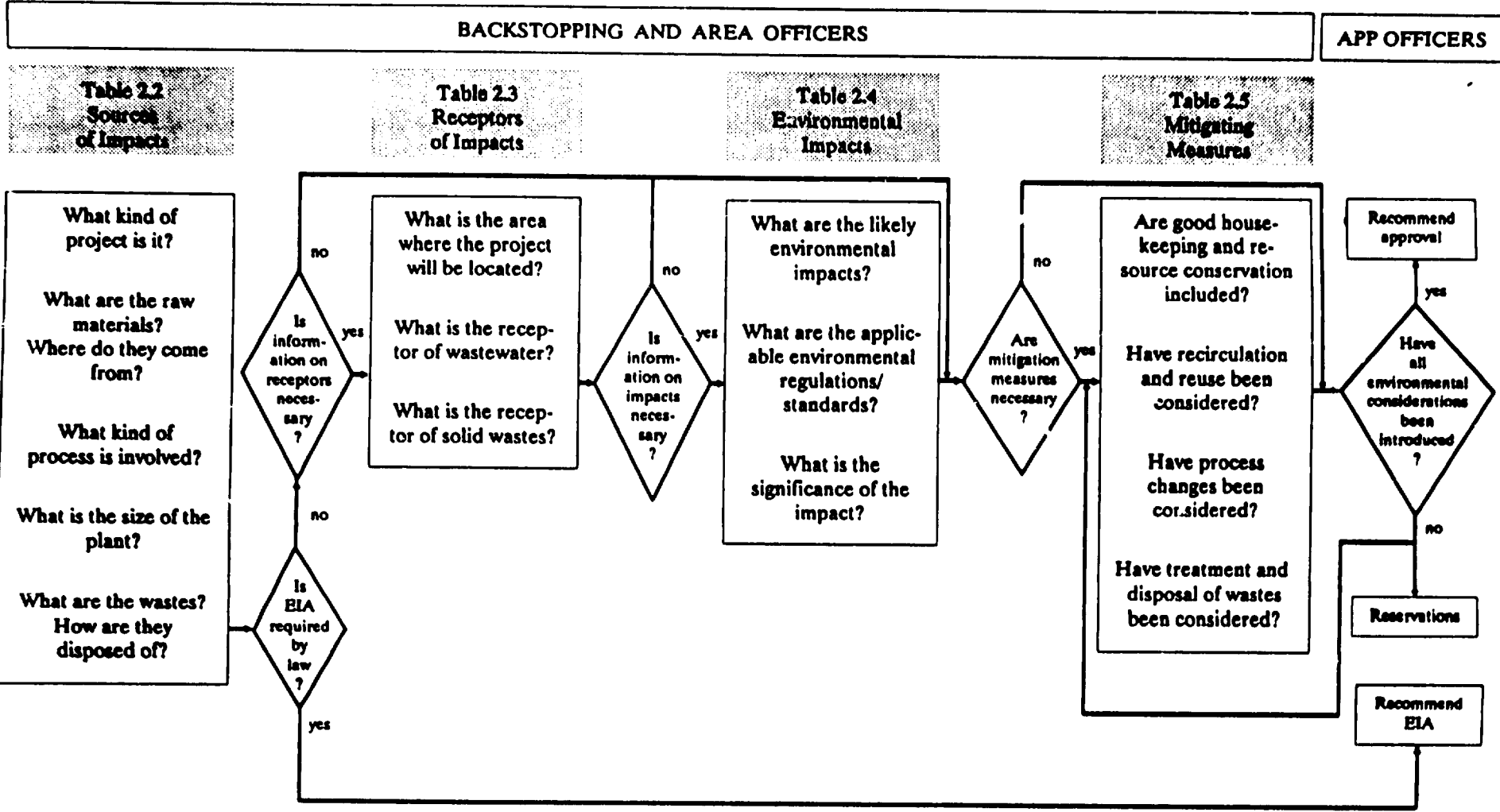
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**Figure 2**  
**Environmental Appraisal of Category A Projects**



**Figure 1**  
**Environmental Appraisal of Category B Projects**



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**Guidelines for Environmental Appraisal: Industry Sectors**

**Volume IIIA: Tanneries and Leather Finishing Industries**

**Volume IIIB: Iron and Steel Manufacturing Industries**

**Volume IIIC: Fertilizer Manufacturing Industries**

**Volume IIID: Food-Agro Industries**

## UNIDO COUNTRY DIRECTORS ENVIRONMENT WORKSHOP

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### Industry sector guidelines:

- Sources of impacts
- Receptors of impacts
- Nature of impacts
- Mitigating measures

## 2.2 Sources of Impacts

**Table 2.2**  
**Sources of Impacts from Iron and Steel Industries**

Programme/Project	Environmental Considerations	Annotations
<b>What kind of project is it?</b>		
<input type="checkbox"/> New iron/steel works.	Relocate/modify design (Table 2.3).	3.1.1
<input type="checkbox"/> Expansion of works.	Modify design (Table 2.3).	3.1.1
<input type="checkbox"/> Process modification.	Improve efficiency (Table 2.4).	3.1.1
<input type="checkbox"/> Waste management.	Comply with regulations and standards; examine receptors (Table 2.3).	3.1.1
<b>What are the raw materials?</b>		
<input type="checkbox"/> Limestone.	Consider mitigating measures	3.1.2
<input type="checkbox"/> Iron ore.	according to materials involved	3.1.2
<input type="checkbox"/> Coal.	(Table 2.5).	3.1.2
<input type="checkbox"/> Chemicals.		3.1.2
<input type="checkbox"/> Water.	Optimise water use (Table 2.5).	3.1.2
<input type="checkbox"/> Energy.	Optimise energy use (Table 2.5).	3.1.2
<b>What are the storage and handling facilities?</b>		
<input type="checkbox"/> Coal.	Minimise dust and leaching (Table 2.5).	3.1.3
<input type="checkbox"/> Limestone/iron ore.	Minimise dust (Table 2.5).	3.1.3
<input type="checkbox"/> Chemicals.	Ensure safe storage (Table 2.5).	3.1.3
<input type="checkbox"/> Water.	Consider adequate plant layout (Table 2.5).	3.1.3
<b>What processing will the raw materials require?</b>		
<input type="checkbox"/> Liming.	Minimise dust and noise;	3.1.4
<input type="checkbox"/> Coking.	reduce escape of emissions;	3.1.4
<input type="checkbox"/> Sintering and pelletising.	ensure adequate health and safety	3.1.4
<input type="checkbox"/> Water filtration/chemical treatment.	measures (Table 2.3).	3.1.4
<b>What is the nature and the size of the plant?</b>		
<input type="checkbox"/> Iron works.	Minimise transport impacts and	3.1.5
<input type="checkbox"/> Steel works.	introduce plant pollution control.	3.1.5
<input type="checkbox"/> Integrated works.	Introduce on-site pollution control	3.1.5
<input type="checkbox"/> Small.	(Table 2.3).	3.1.5
<input type="checkbox"/> Medium.		3.1.5
<input type="checkbox"/> Large.		3.1.5

Continued

**Table 2.2 (Continued)**  
**Sources of Impacts from Iron and Steel Industries**

Programme/Project	Environmental Considerations	Annotations
<b>What are the processes in the plant?</b>		
<input type="checkbox"/> Iron making.	Identify the sources of impact for each process and the wastes produced.	3.1.6
<input type="checkbox"/> Hot metal pretreatment.		3.1.6
<input type="checkbox"/> Electrical furnaces.		3.1.6
<input type="checkbox"/> Oxygen furnaces.		3.1.6
<input type="checkbox"/> Casting.		3.1.6
<input type="checkbox"/> Hot rolling.		3.1.6
<input type="checkbox"/> Cold rolling.		3.1.6
<input type="checkbox"/> Coating.	3.1.6	
<b>What are the wastes? How will they be disposed of?</b>		
Wastewater		
<input type="checkbox"/> Released into sewer.	Introduce primary treatment (Table 2.5).	3.1.7
<input type="checkbox"/> Treated and released into sewer.	Treat further if required (Table 2.5).	3.1.7
<input type="checkbox"/> Released into surface waters.	Introduce primary treatment (Table 2.3).	3.1.7
<input type="checkbox"/> Treated and released into surface waters.	Treat further if required (Table 2.3).	3.1.7
<input type="checkbox"/> Stored on site.	Prevent groundwater contamination; introduce primary treatment (Table 2.5).	3.1.7
Solid waste (slag, ash)		
<input type="checkbox"/> On site.	Minimise waste when possible (Table 2.5).	3.1.7
<input type="checkbox"/> Derelict land.	Examine chemical safety issues (Table 2.4).	3.1.7
<input type="checkbox"/> Refuse dumps.	Examine chemical safety issues (Table 2.4).	3.1.7
<input type="checkbox"/> Groundwater.	Relocate if contamination is likely (Table 2.4).	3.1.7
Atmospheric emissions		
<input type="checkbox"/> Steam.	Recycle and treat final effluent (Table 2.5).	3.1.7
<input type="checkbox"/> Gases.	Introduce control measures (Table 2.5).	3.1.7

## 2.3 Receptors of Impacts

**Table 2.3**  
**Receptors of Impacts from Iron and Steel Industries**

Receptors of Impact	Environmental Considerations	Annotations
<b>Where will the project be located?</b>		
<input type="checkbox"/> Land of ecological, recreational, cultural, commercial value.	Relocate or minimise impact of wastes, noise, odour and visual impact (Table 2.5).	3.2.1
<input type="checkbox"/> In vicinity of rural/urban settlements.	Relocate, ensuring adequate waste and process pollution control (Table 2.5).	3.2.1
<input type="checkbox"/> Industrial area.	Consider waste/emission impact on other industry (Table 2.5).	3.2.1
<b>What are the receptors of wastewater?</b>		
<input type="checkbox"/> Sewers.	Introduce waste management in accordance with environmental	3.2.2
<input type="checkbox"/> River.	regulations or according to nature of	3.2.2
<input type="checkbox"/> Lake.	waste and receptor (Table 2.4).	3.2.2
<input type="checkbox"/> Coastal waters.		
<b>What are the receptors of solid waste?</b>		
<input type="checkbox"/> Rural site.	Consider alternative disposal sites (Table 2.4).	3.2.3
<input type="checkbox"/> Urban/industrial site.	Consider joint waste management (Table 2.4).	3.2.3
<input type="checkbox"/> Derelict land.	Introduce waste management according	3.2.3
<input type="checkbox"/> Urban refuse disposal site.	to requirements (Table 2.5).	3.2.3
<input type="checkbox"/> Coastal waters.	Consider alternative disposal sites (Table 2.4).	3.2.3
<b>What are the receptors of atmospheric emissions?</b>		
<input type="checkbox"/> Natural environment.	Introduce waste emissions and dust	3.2.4
<input type="checkbox"/> Urban settlement.	control according to local requirements	3.2.4
<input type="checkbox"/> Industrial area.	(Table 2.4).	3.2.4



## 2.4 Environmental Impacts

**Table 2.4**  
**Environmental Impacts of Iron and Steel Industries**

Environmental Impacts	Environmental Considerations	Annotations
<b>What are the likely environmental impacts?</b>		
<input type="checkbox"/> Surface water pollution.	Introduce recovery, reuse and treatment of pollutants.	3.3.2
<input type="checkbox"/> Groundwater pollution.	Control wastewater and solids disposal.	3.3.2
<input type="checkbox"/> Effects on sewage treatment plants.	Introduce primary treatment, reuse, recovery of toxic chemicals.	3.3.2
<input type="checkbox"/> Soil pollution.		3.3.2
<input type="checkbox"/> Vegetation loss.	Minimise toxic emissions.	3.3.2
<input type="checkbox"/> Air pollution/odour.	Minimise and clean emissions.	3.3.2
<input type="checkbox"/> Noise.	Create buffers, introduce noise abatement measures.	3.3.2
<input type="checkbox"/> Land use.	Introduce environmental planning.	3.3.2
<input type="checkbox"/> Effects on health and safety.	Improve quality of emissions; improve workers' safety.	3.3.2
<b>What are the applicable environmental standards?</b>		
Land-use planning		
<input type="checkbox"/> Town and country planning.	Relocate, create buffer zones.	3.3.3
<input type="checkbox"/> Protected areas.	Consider relocation.	3.3.3
<input type="checkbox"/> Parks and reserves.		3.3.3
Environmental quality		
<input type="checkbox"/> Surface and ground water.	Consider water quality and effluent standards.	3.3.3
<input type="checkbox"/> Land.	Consider disposal regulations.	3.3.3
<input type="checkbox"/> Air.	Consider emission standards.	3.3.3
<input type="checkbox"/> Noise.	Consider noise standards.	3.3.3
Health and safety standards		
<input type="checkbox"/> Fumes and gases.	Examine health standards, safety procedures and equipment requirements.	3.3.3
<input type="checkbox"/> Harmful chemicals.	Consider staff training.	3.3.3
<b>What is the significance of the impact?</b>		
<input type="checkbox"/> Land use.	Examine if planning laws are prohibitive.	
<input type="checkbox"/> Environmental quality.	Determine priorities, predict and evaluate impacts.	3.3.4
<input type="checkbox"/> Human health.		3.3.4

## 2.5 Mitigating Measures

**Table 2.5**  
**Mitigating Measures for Iron and Steel Industries**

Mitigating Measures	Environmental Considerations	Annotations
<b>Are environmentally sound operation and maintenance included?</b>		
<input type="checkbox"/> Energy efficiency.	Introduce measures to optimise operation.	3.4.2
<input type="checkbox"/> Effective use of resources.		3.4.2
<input type="checkbox"/> Process energy recovery.		3.4.2
<input type="checkbox"/> Health and safety procedures.		3.4.2
<b>Have reuse and recycling been considered?</b>		
<input type="checkbox"/> Recirculation of cooling waters.	Treat water for on-site reuse; segregate waste and by-product streams for reuse and recovery.	3.4.3
<input type="checkbox"/> Reprocessing of sinter/pellet fines.		3.4.3
<input type="checkbox"/> Recovery and reuse of process chemicals/scrap.		3.4.3
<input type="checkbox"/> Recovery and reuse of coking by-products.		3.4.3
<input type="checkbox"/> Reuse of slag in site construction.		3.4.3
<b>Have process changes been considered?</b>		
<input type="checkbox"/> Plant layout.	Change plant layout and processes.	3.4.4
<input type="checkbox"/> Process changes.		3.4.4
<b>Have treatment and disposal of wastes been considered?</b>		
Wastewater		
<input type="checkbox"/> Primary treatment.	Screen and settle waste.	3.4.5
<input type="checkbox"/> Secondary treatment.	Biological oxidation.	3.4.5
<input type="checkbox"/> Sludge treatment.	Dewater, digest.	3.4.5
Solid waste		
<input type="checkbox"/> Incineration.	Burn only environmentally safe materials.	3.4.5
<input type="checkbox"/> Landfill.	Consider environmental hazards.	3.4.5
<input type="checkbox"/> Recovery and reuse.	Grind and recover metals.	3.4.5
Atmospheric emissions		
<input type="checkbox"/> Process heat.	Capture and reuse.	3.4.5
<input type="checkbox"/> Steam.	Condense and reuse.	3.4.5
<input type="checkbox"/> Gases/fumes.	Filter and scrub.	3.4.5
<input type="checkbox"/> Noise.	Insulate, examine plant design.	3.4.5