Aims of EIA implementation and follow up are to:

- carry out conditions of approval
- ensure they work effectively
- verify impacts are as predicted or permitted
- take action to manage unforeseen changes
- optimise environmental benefits
- improve EIA practice in the future
Key components of EIA implementation and follow up

- surveillance and supervision
- effects or impact monitoring
- compliance monitoring
- environmental auditing
- evaluation of EIA effectiveness and performance
- post-project analysis
Tool box for environmental management and performance review

- Internalising the environment in policy and planning - use SEA, technology assessment, comparative risk assessment

- Planning and designing environmentally sound projects - use EIA, SIA, risk assessment, environmental benefit cost assessment

- Environmental management of the impacts of an operating facility or business enterprise - use EMS (ISO 14000 series), total quality environmental management (TQEM), industrial codes of practice
Tool box for environmental management and performance review (continued)

- Eco-design of processes and products - use environmental design, life cycle assessment, cleaner production

- Monitoring, audit, and evaluation of performance - use effects and compliance monitoring, site, energy, waste, health and safety audits, benchmarking, performance review, environmental auditing
Guiding principles of EIA implementation and follow up

- carry out conditions of approval
- undertake routine surveillance and inspection
- other activities should be commensurate with significance
- monitoring and auditing should be undertaken when:
  - potential impacts are potentially significant
  - mitigation measures are untried/outcomes uncertain
  - new aspects of EIA introduced
Aspects to consider in design of EIA implementation and follow up

- What is required?
  - identify the scope and components

- Who will carry out the activities?
  - specify roles and responsibilities

- How will these be implemented?
  - allocate resources, define procedures and arrangements
Monitoring is used to:

- establish baseline conditions
- measure actual impacts and trends
- verify they comply with agreed conditions
- facilitate impact management
- determine the accuracy of impact prediction
- review the effectiveness of mitigation measures
Monitoring requirements in the EIA/EMP

- impacts to be monitored
- objectives and data requirements
- arrangements for conduct of monitoring
- use of the information collected
- response to unanticipated impacts
- measures for public reporting and involvement
For scientifically credible monitoring:

- use methods of a relevant discipline
- establish impact and reference sites
- result in time series data which can be analysed by:
  - assembling the data in tabular or graphic format
  - testing for variations that are statistically valid
  - determining rates and directions of change
Steps to develop an effective monitoring programme

• define the scope and objectives (for each impact)
• identify the boundaries and select sites
• choose the key indicators
• determine the level of accuracy required in the data
• consider how the data will be analysed
• establish a data and reporting system
• specify thresholds of impact acceptability
• set requirements for action on exceedences
Actions to address excessive impacts or unanticipated changes

- stop or modify the causal activity
- impose penalties if legal standards are breached
- add or scale up mitigation measures (if feasible)
EIA audits are used to:

- identify impacts and results
- verify that conditions of approval are being met
- test the accuracy of impact predictions
- check the effectiveness of mitigation measures
- improve compliance and performance
EMS audits include:

- site audits
- compliance audits
- sector & issue audits, e.g.
  - waste
  - energy
  - health and safety
- supply chains
Difficulties commonly experienced in EIA audits

- limited baseline information
- qualitative and non auditable predictions
- changes to project design and mitigation
- long lead times for some types of impact