

Topic 12—EIA project management

Objective

To outline the importance of EIA project management and the roles and responsibilities of those who undertake it.

To understand the skills and knowledge needed to successfully carry out these functions.

Relevance

EIA project management is complex and demanding. It requires a combination of specialist and managerial skills, and commitment to the task. Not all practitioners are suited to the role of Project Manager, nor can the work be done in isolation. All practitioners, however, require an understanding of what EIA project management entails and how different roles, responsibilities and interests are addressed and accommodated.

Timing

Three hours (not including training activity)

Important note to trainers

You should design your presentation with the needs and background of participants in mind, and concentrate on those sections most relevant to your audience. The session presentation timings are indicative only.

Time taken for the training activities can vary enormously depending on the depth of treatment, the existing skills and knowledge of participants and the size of the group.

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Information checklist

Obtain or develop the following materials, as appropriate:

- o examples of EIA schedules and budgets for local projects;
- o examples of the composition and management of teams that have prepared EIA reports for local projects;
- o contact names and telephone numbers of people, agencies and organisations, and environmental information/data resource centres able to provide assistance in relation to the management of EIAs; and
- o other resources that may be available, such as course materials on project management techniques, videos, journal articles, computer programmes, and case studies.

Session outline

Welcome participants to the session by introducing yourself and getting them to introduce themselves. Outline the overall coverage of the session, its objectives and why they are important.

This topic explores the importance of EIA project management and the different roles and responsibilities that might be undertaken. It outlines the skills and knowledge a person might need to successfully carry out these functions.

Introduce the concept of EIA project management and the importance of its role in the EIA process.

The main purpose of EIA project management is to plan, organise and coordinate the tasks necessary to carry out each phase of the EIA process effectively. An immediate objective is to produce an EIA report that communicates the information necessary for sound decision-making (see Topic 8 – *Reporting*). The ultimate objective is to ensure the EIA process results in the environmental benefits expected, notably through actions to avoid, reduce and offset the adverse impact of the project.

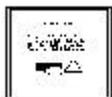
EIA project management encompasses a number of functions. These include giving direction and backing to the team responsible for carrying out EIA studies and activities; liaising with the project engineer, site manager and others responsible for project design, construction and operation; and consulting with the responsible authority, regulatory body and other key EIA stakeholders, including the public and affected communities. The EIA Project Manager needs to understand, take account of and mediate among their varying interests needs and demands. All of this must be accommodated within the time and budgetary constraints under which EIAs are typically undertaken.

Using Handout 12-1, the OECD/DAC *Comprehensive Checklist for Managing Environmental Assessment of Development Assistance Projects*, work through the range of tasks for which the EIA project manager may be responsible. Encourage the participants to develop a list of attributes they feel describe a good Project Manager. Explore why these are important



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To function effectively, the EIA team needs strong leadership and support from the Manager. All team members should have a clear understanding of what is to be achieved, what the deadlines are, how money and resources will be allocated, who does what, who reports to whom and how issues will be resolved.

A good Project Manager will be someone with the following attributes:

- good communication skills;
- solid technical competency;
- problem-solving approach;
- leadership abilities;
- flexibility and willingness to learn from others;
- able to negotiate and settle disputes; and
- proficiency in planning and budgeting.

Good communication

Communication skills are critical for an EIA Project Manager. He or she is the interface between the EIA team and the proponent's staff and contractors. Additionally, the EIA Project Manager will likely be responsible for maintaining external contacts with the competent agencies, regulatory bodies, other relevant authorities, non-governmental organisations and members of the public.

Technical competence

A successful EIA Project Manager will have a sound understanding of the technical aspects and the environmental and social impacts of the project. The appointment of an experienced EIA practitioner is usually necessary to get the best out of an interdisciplinary team.

Problem-solving

EIA Project Managers need to be able to tackle problems and turn them around quickly as deadlines are often very tight. They also need to move expeditiously to meet the EIA terms of reference, fine tuning aspects as the situation requires. Excessive caution in the early stages delays the time for this sort of correction.

Leadership abilities

To command the respect of the team, the EIA Project Manager must exercise leadership. This means having a clear idea of what is to be done and how the tasks are to be carried out. Good interpersonal skills are needed to

motivate team members, allied with qualities of integrity and sound judgement.

Flexibility and willingness to learn

The EIA Project Manager is likely to be a generalist rather than a specialist. He or she needs to know enough about each of the specialisations of the team to ask the right questions and test the advice that is given. Additionally, the Project Manager must be flexible, respecting the credentials and professional judgements of others and be open to learning from them.

Able to negotiate and reconcile disputes

It is the EIA Project Manager's job to get the best out of team members, and to negotiate compromises when there are disagreements of interpretation. Additionally, he or she will also need to negotiate with the proponent, project design and construction teams, government agencies and stakeholders. For example, EIA studies may indicate a project has a more significant impact than was first identified and the Project Manager must then negotiate with the proponent for additional resources.

Proficiency in planning and budgeting

The EIA process is invariably undertaken within strict time and budgetary constraints. It also involves accommodating new information and changing requirements within an EIA process that is in lockstep with a schedule for project development. Making these adjustments demands planning and budgetary competencies.

Outline the typical role of the EIA Project Manager. Ask the participants if there are other roles that they have encountered.

The EIA Project Manager, as the team leader, needs considerable interpersonal skills. A major part of the job involves: understanding the larger context of the EIA study; team building and facilitation of key tasks; asking the right questions to keep work on track; and maintaining quality control. These functions also involve making hard management decisions, often in the face of risk and with limited information.

The technical aspects of EIA project management are also demanding. The conduct of EIA studies requires the Manager to have a rounded understanding of the impacts being analysed, sufficient to ensure direction and quality control of the technical content. The preparation of the EIA report requires the integration and synthesis of study findings into a coherent overall statement of the environmental impacts and consequences of a proposal. This task falls primarily on the shoulders of the EIA Project Manager.

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In part, the role of the EIA Project Manager will depend on whom he or she works for. There are, however, certain core tasks, including:

- understanding the issues involved and the affected environment;
- defining tasks and developing an appropriate work programme;
- setting time lines for delivery;
- estimating and managing a budget;
- establishing an organisational structure;
- putting together an interdisciplinary EIA team;
- establishing standards and maintaining quality of work;
- managing and co-ordinating the information generated by the study; and
- preparing the EIA report to comply with the terms of reference.

Outline why an interdisciplinary EIA team is required and what it entails.

Most proposals have a number of potential impacts, notably including physical, chemical, biological, social, cultural and economic impacts. The EIA team will need to bring together multiple viewpoints and expertise in order to produce a reasoned statement of the overall impact. The selection of appropriate team members is a key task of the EIA Project Manager.

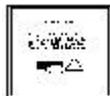


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An interdisciplinary team consists of a group of people, trained in different fields, who interact to produce a coordinated EIA report. This approach can be contrasted with a team made up of experts, who pursue their lines of inquiry relatively separately and do not have a common understanding of the impact of the proposal. In this case, the EIA Project Manager has the primary task of drawing together the findings. Often, the lack of an interdisciplinary approach results in an EIA report that lacks real synthesis, containing a number of specialist studies with little cross-referencing.

Members of an interdisciplinary team will be chosen for their complementary perspectives and technical expertise in analysing the environmental and social impacts that are of concern. Experience in EIA, as well as disciplinary competence, will be a factor influencing selection. When determining the composition of the team, the EIA Project Manager will have to choose the level of expertise that is warranted in the circumstances, for example, whether to engage a general ecologist for the term of the study or a number of specialists to undertake specific components.

In practice, the choice of EIA team members will be limited by who is available and what can be afforded. Teams can range in size from two or three to up to thirty members, depending on the complexity of the proposal. In developing countries, even large proposals may have only a few specialised staff



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allocated to the EIA, although small teams are not necessarily less effective or efficient. They can promote continuity, and encourage better communication and greater individual responsibility for the success of the EIA.

In summary, factors that can affect the selection of team members include:

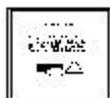
- available finances;
- range of impacts to be studied;
- demonstrated expertise and experience ;
- local knowledge; and
- ability to work with others and contribute to team efforts.

Establishing a team does not in itself guarantee that the EIA will be interdisciplinary. It is the role of the EIA Project Manager to structure opportunities for the team to work together. Often, an initial site visit is a first, important means of bringing together team members to learn about the scope of the EIA study. Other meetings can be used to review the direction, progress and results of the work and to develop an integrated approach to writing the EIA report.

The EIA Project Manager will be responsible for keeping open the lines of communication with the stakeholders, and for addressing conflicts and differences. Conflict within the team can be either because of disagreement about scientific interpretation, or because members do not get on with each other. The proponent can disagree with the EIA team about the significance of key impacts, or, worse still, want to alter the EIA report. Other stakeholders may attempt to push their own interests by disagreeing with the basis of study findings, reflecting different objectives or values from those of the EIA team and/or proponent.

Some of these conflicts can be avoided or contained by effective communication and the provision of timely information. Other conflicts within the EIA team and with the proponent will test the negotiation skills of the Project Manager, and call for a combination of diplomacy, mediation and dispute settlement. Even so, it will not be possible to satisfy all of the parties all of the time.

Ask the participants to identify appropriate attributes of members of an EIA interdisciplinary team.



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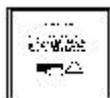
A member of a successful interdisciplinary EIA team should have:

- interpersonal skills;
- creativity;
- adaptability;
- good oral and written communication skills;
- organisational capability;

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- the ability to listen and to assimilate information;
- a sense of humour; and
- patience.

Introduce the concept of project control through scheduling. Outline the use of bar charts and critical path methods and ask the participants to suggest any deficiencies these may have. Show participants examples of a schedule (if available) for a local project.



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The EIA Project Manager is responsible for scheduling how the EIA study will be organised into component activities and how these will fit together. This is a crucial control mechanism, which involves:

- identifying key events and dates for completion of the component activities;
- allocating the resources required to complete each of these activities;
- estimating the time required to complete each of these activities; and
- estimating the cash flow.

Both simple and complex methods of scheduling are available. Their use will depend upon the complexity of the EIA process in relation to project development. Often, simple flow and bar charts will suffice. In other cases, more powerful methods of scheduling will be warranted, such as critical path methods (CPM) of which PERT is commonly used for controlling engineering projects. These methods use network logic to construct a logical sequence of tasks necessary to complete the EIA as shown in the figure below.



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A project schedule can then be produced (using project management software) as shown in the accompanying calendar bar or Gantt chart. This chart sets out:

- the activities to be performed;
- the time period to undertake and complete them;
- the events that begin and end each activity; and
- the relationship between the activities, recognising that some can be undertaken concurrently but others are dependent on the completion of other tasks.

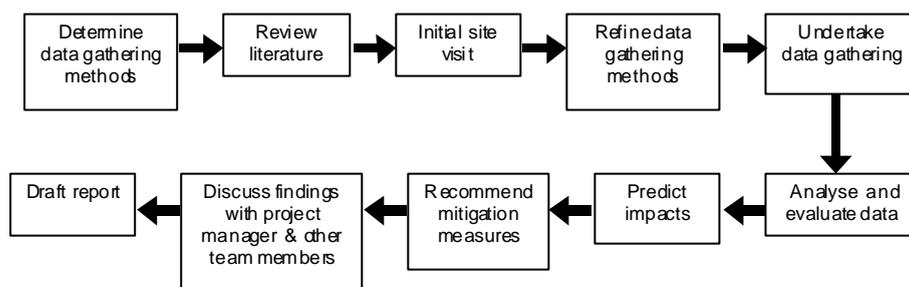
Critical tasks are ones, which if they overrun, lengthen the time taken to complete the EIA project. These tasks and the links between them are known as the critical path, and they have to be managed with particular care. EIA project managers will be alert to study dependencies, for example where the prediction of ecological impact is dependent on results from a habitat survey. It is their task to anticipate these contingencies, build them into the project schedule, and take corrective actions as necessary to meet critical deadlines.

Use of project scheduling software makes it easy to determine the revised time scales. In the example given below, certain adjustments can be made to the relationship of the various tasks. For example:

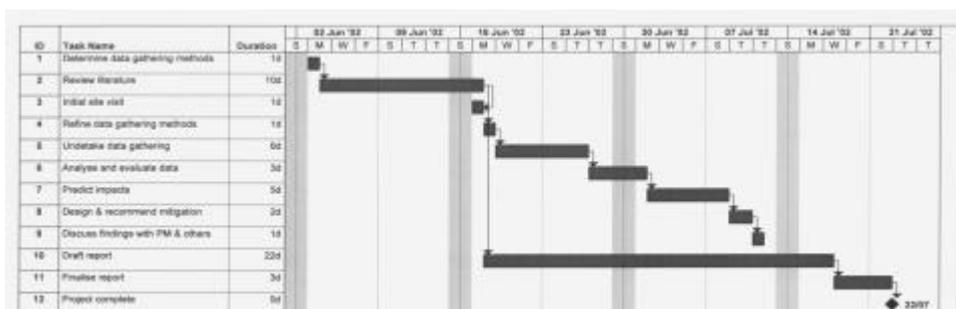
- It is not necessary to undertake the initial site visit after completion of the literature review, but it is important for the site visit to have been undertaken by the time the literature review is complete (this is a finish to finish relationship).
- Drafting of the report can commence once the literature review is complete, but cannot be completed until all other tasks are complete.

In this example the project would begin on 2 June 2002 and would be complete on 22 July 2002. The duration of each task is given in days in the third column from the right and is represented by the horizontal bars. The relationship between the tasks is illustrated by the arrows which connect the bars.

Example of a simple flow chart



Example of a project schedule bar chart



8

Introduce and outline the role of budgeting as one of the primary tasks of the Project Manager.

The most difficult part of budgeting is the initial estimate of the funding required. EIA Project Managers first identify the most important issues and how they are related to each other. An estimate then can be made of the cost of the studies needed, the people to undertake them, the time required to carry them out, the services and equipment required to support the team and the overheads.

A budget should take account of costs from all possible sources and allow for unexpected problems. Items of expenditure can include:

- employed and contracted labour;
- overheads;
- travel and travel allowances;
- vehicle purchase, running and maintenance costs;
- communications;
- computer hardware and software;
- equipment; and
- document production and duplication.

When preparing an EIA budget, staff costs will be the primary item. Overhead and other costs (e.g. report production and communications) may be calculated by applying a multiplier to the labour costs, as shown in the example below. Usually, the multiplier is between two and three times the labour cost, depending on the profit margin. Other costs should be added separately to the budget. Capital expenditures or contract services may be high for certain projects or aspects (e.g. a contaminated land survey).

EIA Project Managers often must fight hard for an adequate budget, sufficient to address the significant impacts of a proposal. Alternatively, they may have to make corresponding cuts to the scope, desired accuracy or technical breadth of the planned assessment while still maintaining its quality and integrity. Tight control must be exercised to prevent overruns, for example by establishing reporting systems that track expenses and progress against the budget. Of course, not everything will go to schedule and if study components have to be changed it is good policy to put this in writing.



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Sample of part of budget preparation



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Expertise required	Rate of pay (\$ per hour) (a)	Estimated duration of work (hours) (b)	Overhead multiplier (c)	Total (a)x(b)x(c) \$
Noise impact				
1. Investigation				
senior	60	5	2.5	750
junior	15	20	2.5	750
2. Analytical				
senior	60	6	2.5	900
junior	15	40	2.5	1500
3. Reporting				
senior				
junior				
Social impact				
1. Investigation				
Principal				
Senior				
Junior				
2. Analytical				
3. Reporting				

Source: Bingham (1994)

Briefly outline the Project Manager’s responsibilities in preparing the EIA report (this is covered more fully in Topic 8-Reporting). Ask the participants to add to the discussion based on their own experience.

The EIA report is a primary document for decision-making, and for informing stakeholders about likely environmental impacts of a proposal and the measures for mitigating them. EIA reports must be written to an appropriate technical standard, in compliance with the terms of reference and in an easy-to-understand style. They also must be carefully edited, designed and produced. Money should be allocated in the budget for these purposes, and for distribution. Experienced EIA Project Managers recognise that often more copies of the report will be printed than is normally budgeted for, particularly if the proposal is controversial.

An early start to writing the EIA report can be a good idea. However, it is important to avoid too detailed and elaborate descriptions of the existing environment (see Topic 8 –Reporting). This material is available early and the temptation is to give it more emphasis than it deserves. The EIA report is intended to be a statement of impact, and this information should comprise

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the main body of the text. Equally important is the executive summary of the relevant findings; this is the part of the report which most people read.

The EIA report will find many critics, and any inaccuracies will make it more open to challenge. It is the responsibility of the EIA Project Manager to provide overall quality control, checking each detail of the report for consistency and accuracy. Proponents may be tempted to either ignore or hide material they feel is detrimental to the project. This can be highly contentious and the best defence is for the EIA Project Manager to point out that omissions often raise much greater opposition and can contribute to delaying or even stopping the proposal.

Little is achieved if the findings of final report are not successfully communicated. It is necessary to avoid misleading or ambiguous terms, which can be interpreted in different ways. Clear definitions should be given for terms such as significant, severe, moderate or negligible impact, remembering the many audiences of the EIA Report. Not all readers will be familiar with project details and impact magnitudes may need to be translated into recognisable quantities. For example, it may be helpful to state the transport of the millions of cubic meters of earth and rock to build a dam in terms of the number and frequency of truck loads needed during construction.

Often, the final period of report editing and production is a crisis time for the EIA Project Manager and the team. It can be helpful to have a competent outsider review the report for consistency, accuracy and completeness before it is reproduced and distributed. Remember, too, most reports will go through a quality check as part of the EIA process, and it is helpful to replicate this internally to anticipate the findings of an 'official' review.

Briefly reinforce the capacity building aspects of the role of the project manager.

Before the EIA team disbands, it can be useful to have a 'post mortem' of performance during the project. The lessons learned can be used to improve the next EIA (see Topic 11 – *EIA implementation and follow up*). Wherever possible, the EIA Project Manager should make arrangements to dispose of any equipment that has been acquired, and to catalogue and store data, reference materials and contact lists for use in future assessments. This information is likely to be particularly important in developing countries, where EIA experience may be limited and resources are scarce.

Include a training activity to reinforce the topic (if desired).

Conclude by summarising the presentation, emphasising key aspects of the topic that apply locally.

Reference list

The following references have been quoted directly, adapted or used as a primary source for major parts of this topic.

Burack D A (1992) *Better Management: The Key to Successful Environmental Impact Assessment (EIA). 12th Annual Meeting and International Congress of the International Association for Impact Assessment.* Washington, D.C.

Bingham C S (1994) *EIA and Project Management - A Process of Communication. 15th International Seminar on Environmental Assessment and Management.* University of Aberdeen, Scotland.

Canter L (1996) *Environmental Impact Assessment.* McGraw Hill, New York,. (specifically at Chapter 2: Planning and Management of Impact Studies, pp.36-55).

OECD/DAC (1994) *Towards Coherence in Environmental Assessment. Results of the project on Coherence of Environment Assessment for International Bilateral Aid. Vol. 2.* Canadian International Development Agency, Ottawa.

World Bank (1996) *The Challenges of Managing the EIA Process. Environmental Assessment Sourcebook Update,* November 16, Environment Department, The World Bank, Washington D.C.

Further reading

Canter L (1991) *Interdisciplinary Teams in Environmental Impact Assessment. Environmental Impact Assessment Review* 11:4, 375-387.

Scott Wilson Ltd. (1996) *Environmental Impact Assessment: Issues, Trends and Practice.* Environment and Economics Unit, UNEP, Nairobi.

Training activities

Training activities will be more instructive if they are framed around a local proposal. Consider inviting prospective course participants to make a presentation if they have expertise in this area of EIA.

Discussion themes

- 12-1 Would the role of the EIA Project Manager in this country differ significantly from the one outlined in the topic presentation? What aspects would differ? What are the implications of these differences for the EIA process?
 - 12-2 What advantages does using an interdisciplinary team approach bring to EIA?
 - 12-3 What process could be used to select the members of an interdisciplinary team? Where might the required expertise be found?
 - 12-4 How could the work of an interdisciplinary EIA team be monitored?
 - 12-5 What measures can be put in place to ensure that an EIA team is managed in an interdisciplinary manner?
 - 12-6 Imagine that you are managing an interdisciplinary EIA team and need to select a consultant to be responsible for creating and implementing the public involvement strategy. Which credentials of those consultants applying for the position would be the most important to you in deciding which one to engage?
-

Speaker themes

- 12-1 Arrange for a speaker with experience of managing an EIA team on a local project to discuss its composition and organisation. What types of expertise did the team members have? How was the team organised to interact in an interdisciplinary manner? What could have been done to improve the management of the team?
 - 12-2 Arrange for a speaker with experience of managing an EIA team on a local project to discuss how the EIA study was conducted. What were the key tasks and activities? What were the main issues encountered? How was the EIA report drafted
-

Group Activity 12-1: EIA project management

Title: Project scheduling

Aim: To understand the process of task identification, preparing a project schedule and budgeting.

Group size: Four to six people

Duration: Half-day to one day

Resources required

- o Case study containing preliminary EIA information.
- o Handout 12-1

Description of activity:

Using a case study:

- o identify the major steps in the EIA;
 - o identify the major tasks to be undertaken in managing, conducting and writing the EIA;
 - o construct a bar chart to show how the EIA could be scheduled;
 - o identify the manpower resources required to perform these tasks;
 - o estimate the time commitment required by each project member, including meetings, public consultation and review of documentation;
 - o prepare a budget for the EIA using hourly rates; and
 - o estimate other expenses such as travel and EIA Report production costs.
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Group Activity 12–2: EIA project management

Title: Establishing an interdisciplinary EIA team

Aim: To understand how to select an interdisciplinary EIA team, using local consultancies.

Group size: Small group activity followed by a large group summing up.

Duration: Half-day

Resources required:

- o Description of a project
- o Brief terms of reference
- o Three proposals (real or invented) from local consultancies to carry out the work.

Description of activity:

Using the terms of reference and project description:

- o develop a set of criteria that could be used to choose between consultancies that tender for the work;
 - o review the three proposals and use the criteria to select the team that has the best credentials to undertake an interdisciplinary EIA, cost-effectively; and
 - o in the whole group discuss how successful the decision criteria were and what issues must be addressed in putting together an interdisciplinary EIA team locally.
-



1

Attributes of a good EIA Project Manager:

- good communicator
- technical competency
- problem-solver
- team leader
- flexibility and willingness to learn
- able to negotiate
- planning and budgeting proficiency



2

Core tasks of EIA project management

- understand the issues
- define tasks and work programmes
- set timelines for delivery
- estimate and manage the budget
- establish an organisational structure
- put together the EIA team
- establish and maintain work standards
- manage information flow
- prepare the EIA report



3

Key characteristics of an interdisciplinary EIA team:

- complementary perspectives and expertise
- interact together
- undertake an integrated approach
- common understanding of key impacts
- prepare a synthesis report



4

Factors influencing selection of EIA team:

- finances available
- range of impacts to be studied
- expertise and experience
- local knowledge
- ability to work with others



5

Attributes of interdisciplinary team members:

- interpersonal skills
- creativity
- adaptability
- communication skills
- organisational aptitude
- listening skills
- sense of humour
- patience



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Steps in EIA project scheduling

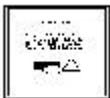
- identify key events
- break down project into stages
- estimate timing of stages
- identify resources required
- estimate cash flow



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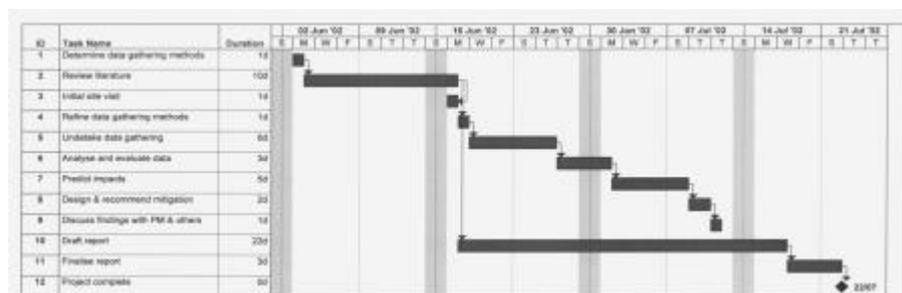
A calendar bar or Gantt chart sets out:

- activities to be performed
- timelines for completion
- events that begin and end each activity
- links between the activities
- the critical path



8

Example of project schedule bar chart



9

Items in an EIA budget include:

- labour costs
- overheads
- travel expenses
- capital expenditures
- communication and report production costs

Sample of part of budget preparation

10

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Source: Bingham (1994)