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Construction impacts

Construction needs to be carried out so as to minimise environmental and social impacts, best achieved through a construction environmental management plan.

Issue

The construction phase of any development raises its own particular environmental and social issues., and hydropower schemes are no exception. Where a new development is planned, there are a range of activities that could potentially cause environmental harm and result in social impacts.

Impacts that may arise at the construction phase and need to be planned for can include but are not limited to:

- drainage problems;
- erosion and sediment liberation due to earthmoving, clearing, quarrying and road-making;
- long-term scars on the landscape due to vegetation and earth removal or disturbance;
- chemical, fuel and oil spills;
- waste management issues;
- long-term site contamination risks;
- introduced species; and
- disturbance of animal and plant communities.

Social issues can be associated with the above impacts, but can also arise in their own right and need to be considered in a construction planning process. Loss of community cohesion and values may be at risk with the introduction of migratory workforces, and competition for local resources. Noise and dust may also be issues where the development is close to human habitation, and health issues have been known to arise when local communities are exposed to outside influences.

The construction phase, with its high level of intensity, large local workforce and influence on the local economy, can take a number of years, and the cessation of this phase can cause its own social and economic impacts.

Management

Potential construction impacts should be adequately addressed during the environmental assessment stage, and construction impact minimization plans need to be developed and implemented to manage these issues. This can be assisted with the establishment of an Environmental Committee to oversee development of a construction environmental management plan or CEMP.

A CEMP includes details and outlines processes that contractors and others are required to follow to manage specific issues. For example, the stockpiling of topsoil for later re-use in rehabilitation needs to be planned for, with a site designated for ease of material recovery and ready access. Thought may also need to be given to the timing of collection of seed material from native botanical resources, so that areas can be rehabilitated following construction with plant materials that are endemic to the area.

New roads, temporary access tracks, works storage areas and quarry sites can be located below minimum water levels so that they are unobtrusive following inundation of the impoundment. Similarly, excess road spoil can also be disposed of in locations that will be below the minimum water level.

A CEMP should also specify processes for the storage and handling of chemicals as well as waste disposal of used containers and other materials. Human health and other social services need to be planned for, and may be additional elements to include in the CEMP to avoid potential problems.

Having identified the construction issues that need to be managed through the CEMP process, construction impacts must be closely monitored so that any potential issues can be quickly addressed as they arise. Lines of responsibility and accountability need to be allocated to key personnel so that performance can be checked.