Environmental Impact Assessment Discussion

"*Environmental Impact Assessment (EIA) may provide a mechanism for implementing sustainable development and ensuring wise use of natural resources. By providing analytical procedures for studying relationships between organisms and their environment, ecological science has an obvious role in EIA, but this has been under-exploited under existing legislation*"

(Treweek, 1996)

Definitions of Environmental Impact Assessment (EIA) vary widely depending on the source, but in its simplest form "*EIA is a procedure that must be followed for certain types of development before they are granted development consent*" (ODPM). The aim of an EIA is to determine that all the possible effects from social and economic to the effect on flora and fauna that human developments could have on the environment. By using a systematic approach, analyzing possible impacts separately in detail helps developers and planning authorities to focus on the best possible usage of natural resources (land, materials, species etc) in the least environmental damaging and most sustainable way. European legislation 85/33/EEC as amended by 97/11/EC demands and EIA to be completed for specific types of development. In the United Kingdom these regulations are contained within the Town and Country Planning Act (Assessment of Environmental Effects) regulations 1999 (Therivel *et al*, 2005). Since all present flora and fauna are supposed to be established through the EIA process, ecological science has an important role. The importance of a site's ecology is commonly established by the use of sampling, this theoretically should be done over a year long period and in each different environment on the site (i.e. running water, standing water, field, field boundary, hedgerow etc). The sampling aspect of the EIA process is currently an underexploited and poorly organised area with no set legislation used to regulate the sampling (ODPM). With the EIA process costing money a developer is likely to have sampling done as quickly as possible, this potentially could result in a sample becoming representative of only a small area and single time of year. It is also possible if not proven that with no specific sampling regulations a developer could alter or even falsify sampling data to their benefit, i.e. they have no reason to be unbiased and find something to stop the proposal.

Moore and Wegner (2005) state that one of the main problems in EIA is the writers or samplers lack of specific expertise in ecology or ecological diversity, this gives rise to poor quality results and inaccurate data collection. If ecological knowledge is not present how can anyone truly understand the ecological impacts a development could have. These problems can be seen in a case study of the N21 link road, Republic of Ireland (Therivel *et al*, 2005). This road originally to be built through an area of alluvial forest was not subject to the EIA process due to its size and developers believed it had no environmental value. Despite complaints from the public the proposal went ahead. Only thanks to the Irish system for compulsory purchase (needed to buy the woodland) was the wood saved when a private body commissioned an environmental survey and proved its ecological value.

With the current system, analysis of the ecological aspects tends to focus on the site itself. This is one issue that will need revising as the changes of ecology will have wider implications for the surrounding area (Townsend *et al*, 2003). The change for example in water conditions on a stream running through the site could drastically change the ecology of potentially the whole watercourse. This type of analysis of the indirect consequences associated with a development could indicate greater problems than many planners would have believed. Treweek *et al* (1998) has looked into the EIA process in relation to the ecology and wider implications, he found that the EIA process is severely restricted in its scope and becomes constrained with artificial boundaries failing to take into account trans-boundary implications. He recommends the use of some form of strategic ecological assessment (SEcA) to ensure that developments account for these trans-boundary effects. This though is not a requirement under current legislation and there would be no incentive for a planner to undertake such an analysis truthfully as it could stop the development. Primack (2002) has investigated the effect of habitat fragmentation on species, this is a process likely to occur when developments split or ‘fragment’ the natural habitats. He illustrates how the fragmentation causes widespread problems creating artificial islands of species. Pullin (2004) has also researched this and shows that these islands increase dramatically the possibility of extinction and reduce the overall health of the environment through factors such as inbreeding and restricted feeding grounds. If planning procedures identified these issues before development it would be possible to adapt plans to be more wildlife friendly with the implementation of habitat corridors, bird boxes, badger tunnels etc.

New legislation and impartial EIA/SEcA production by professional ecologists would stop any foul play and more importantly protect the ecology and promote environmentally sensitive developments. The Environmental Impact Statement (EIS) is an integral part of the overall EIA and is used as a detailed description of the potential damage to the environment. It aims to assess the above problems in more detail and if possible provide an alternative. Under the current legislation a developer must give a "*description of the aspects of the environment likely to be significantly affected by the development*" (Therivel *et al*, 2005). This legislation does show potential but still 'loopholes' and unclear information limit the potential use. One main problem with the EIS process is the concept of 'significant affect', many questions could be asked of this such as who decides on significance, can significance be measured, and is significance the same for every site? If correctly legislated this area of the EIA process could help to protect the ecology of a site or help the developer design a more environmentally sustainable proposal. It must be remembered though that an EIA is only one possible tool to promote sustainable use and limit ecological impacts. Lawrence (1997) believes that the EIA process is just a baseline for other more specific legislation, reports and data. If public policy instruments such as land-use mapping, environmental management plans and pollution control were all integrated into the EIA process it would benefit all parties involved.

The EIA process as it stands does under exploit the contribution ecological science could play in sustainable development. It has the potential to not only stop inappropriate developments but also to encourage more environmentally friendly building. At present the legislation is unclear and relies heavily on the honesty of the developer himself who has no logical reason to find problems on site. No regulations govern the completion of the environmental surveys and sampling giving rise to poor quality data collected by amateurs in the field. If the EIA process was put into the hands of expert, independent companies with the appropriate ecological knowledge the system would improve and developments become more sustainable.

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