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Environment Impact Assessment of Bikaner District Using GIS

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ABSTRACT: Environmental Impact assessment (EIA) is the assessment of the environmental consequences of a plan, policy, program, or actual projects prior to the decision to move forward with the proposed action. In this context, the term "environmental impact assessment" is usually used when applied to actual projects by individuals or companies and the term "strategic environmental assessment" (SEA) applies to policies, plans and programmes most often proposed by organs of state.[1][2] It is a tool of environmental management forming a part of project approval and decision-making.[3] Environmental assessments may be governed by rules of administrative procedure regarding public participation and documentation of decision making, and may be subject to judicial review.[1-10]

The purpose of the assessment is to ensure that decision-makers consider the environmental impacts when deciding whether or not to proceed with a project. The International Association for Impact Assessment (IAIA) defines an environmental impact assessment as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made".[4] EIAs are unique in that they do not require adherence to a predetermined environmental outcome, but rather they require decision-makers to account for environmental values in their decisions and to justify those decisions in light of detailed environmental studies and public comments on the potential environmental impacts

KEYWORDS: EIA, strategic, management, international, biophysical, values, studies, impacts, judicial

I. INTRODUCTION

Environmental Impact Assessments commenced in the 1960s, as part of increasing environmental awareness.[6] An EIA is prepared to estimate the effects of a proposed development or construction project. EIA provides technical evaluations that are intended to contribute to more objective decision making. In the United States, EIA obtained formal status in 1969, with the enactment of the National Environmental Policy Act (NEPA). EIAs have been used increasingly around the world.[91-94] The number of environmental assessments filed every year "has vastly overtaken the number of more rigorous Environmental Impact Statements (EIS)."[7] An environmental assessment is a "mini-Environmental Impact Statement (EIS) designed to provide sufficient information to allow the agency to decide whether the preparation of a full-blown Environmental Impact Statement (EIS) is necessary."[8][9]

In the present investigation EIS of Bikaner district is done using GIS. General and industry specific assessment methods (GIS) are available including:

- Industrial products – Product environmental life cycle analysis (LCA) is used for identifying and measuring the impact of industrial products on the environment. These EIAs consider activities related to extraction of raw materials, ancillary materials, equipment; production, use, disposal and ancillary equipment.[10]
- Genetically modified plants – Specific methods available to perform EIAs of genetically modified organisms include GMP-RAM and INOVA.[11]
- Fuzzy logic – EIA methods need measurement data to estimate values of impact indicators. However, many of the environment impacts cannot be quantified, e.g. landscape quality, lifestyle quality and social acceptance. Instead, information from similar EIAs, expert judgment and community sentiment are employed. Approximate

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| Volume 1, Issue 2, December 2018 |

reasoning methods known as fuzzy logic can be used.[12] A fuzzy arithmetic approach has also been proposed[13] and implemented using a software tool (TDEIA).[14]

At the end of the project, an audit evaluates the accuracy of the EIA by comparing actual to predicted impacts. The objective is to make future EIAs more valid and effective in Bikaner. Two primary considerations are:[11-20]

- Scientific – to examine the accuracy of predictions and explain errors
- Management – to assess the success of mitigation in reducing impacts

Audits can be performed either as a rigorous assessment of the null hypothesis or with a simpler approach comparing what actually occurred against the predictions in the EIA document.[15]

After an EIA, the precautionary and polluter pays principles may be applied to decide whether to reject, modify or require strict liability or insurance coverage to a project, based on predicted harms.

The Hydropower Sustainability Assessment Protocol is a sector-specific method for checking the quality of Environmental and Social assessments and management plans. Sustainability measurement is a set of frameworks or indicators to measure how sustainable something is. This includes processes, products, services and businesses. Sustainability is difficult to quantify. It may even be impossible to measure.[1] To measure sustainability, the indicators consider environmental, social and economic domains. The metrics are still evolving. They include indicators, benchmarks and audits. They include sustainability standards and certification systems like Fairtrade and Organic. They also involve indices and accounting. And they can include assessment, appraisal[2] and other reporting systems. These metrics are used over a wide range of spatial and temporal scales.[3][1] Sustainability measures include corporate sustainability reporting, Triple Bottom Line accounting. They include estimates of the quality of sustainability governance for individual countries. These use the Environmental Sustainability Index and Environmental Performance Index. Some methods let us track sustainable development.[4][5] These include the UN Human Development Index and ecological footprints.

Two related concepts to understand if the mode of life of humanity is sustainable, are planetary boundaries[6] and ecological footprint.[7] If the boundaries are not crossed and the ecological footprint is not exceeding the carrying capacity of the biosphere, the mode of life is regarded as sustainable.

A set of well defined and harmonized indicators can help to make sustainability tangible. Those indicators are expected to be identified and adjusted through empirical observations (trial and error).[8] The most common critiques are related to issues like data quality, comparability, objective function and the necessary resources in Bikaner.[9] However a more general criticism is coming from the project management community: "How can a sustainable development be achieved at global level if we cannot monitor it in any single project?".[10]

II. DISCUSSION

The EIA is done using GIS in Bikaner district . The Ministry of Environment, Forests and Climate Change (MoEFCC) of India has been in a great effort in Environmental Impact Assessment in India. The main laws in action are the Water Act(1974), the Indian Wildlife (Protection) Act (1972), the Air (Prevention and Control of Pollution) Act (1981) and the Environment (Protection) Act (1986), Biological Diversity Act(2002).[62] The responsible body for this is the Central Pollution Control Board.[21-30]

Environmental Impact Assessment (EIA) studies need a significant amount of primary and secondary environmental data. Primary data are those collected in the field to define the status of the environment (like air quality data, water quality data etc.). Secondary data are those collected over the years that can be used to understand the existing environmental scenario of the study area. The environmental impact assessment (EIA) studies are conducted over a short period of time and therefore the understanding of the environmental trends, based on a few months of primary data, has limitations. Ideally, the primary data must be considered along with the secondary data for complete understanding of the existing environmental status of the area. In many EIA studies, the secondary data needs could be as high as 80% of the total data requirement. EIC is the repository of one-stop secondary data source for environmental impact assessment in India.

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| Volume 1, Issue 2, December 2018 |

The Environmental Impact Assessment (EIA) experience in India indicates that the lack of timely availability of reliable and authentic environmental data has been a major bottleneck in achieving the full benefits of EIA. The environment being a multi-disciplinary subject, a multitude of agencies are involved in collection of environmental data. However, no single organization in India tracks available data from these agencies and makes it available in one place in a form required by environmental impact assessment practitioners. Further, environmental data is not available in enhanced forms that improve the quality of the EIA. This makes it harder and more time-consuming to generate environmental impact assessments and receive timely environmental clearances from regulators. With this background, the Environmental Information Centre (EIC) has been set up to serve as a professionally managed clearinghouse of environmental information that can be used by MoEF, project proponents, consultants, NGOs and other stakeholders involved in the process of environmental impact assessment in India. EIC caters to the need of creating and disseminating of organized environmental data for various developmental initiatives all over the country.

EIC stores data in GIS format and makes it available to all environmental impact assessment studies and to EIA stakeholders in Bikaner.

In 2017, the Government of India proposed a new EIA 2017 Draft, which was widely criticized for heavily diluting the EIA.[63] Many Environmental groups started a campaign demanding the withdrawal of the Draft, in face of these campaigns, the Government of India resorted to banning/blocking the websites of these groups.[64] Sustainable development has become the primary yardstick of improvement for industries and is being integrated into effective government and business strategies. The needs for sustainability measurement include improvement in the operations, benchmarking performances, tracking progress, and evaluating process, among others.[11] For the purposes of building sustainability indicators, frameworks can be developed and the steps are as follows:[12]

1. Defining the system- A proper and definite system is defined. A proper system boundary is drawn for further analysis.
2. Elements of the system- The whole input, output of materials, emissions, energy and other auxiliary elements are properly analysed. The working conditions, process parameters and characteristics are defined in this step.
3. Indicators selection- The indicators is selected of which measurement has to be done. This forms the metric for this system whose analysis is done in the further steps.
4. Assessment and Measurement- Proper assessing tools are used and tests or experiments are performed for the pre-defined indicators to give a value for the indicators measurement.
5. Analysis and reviewing the results- Once the results have been obtained, proper analysis and interpretation is done and tools are used to improve and revise the processes present in the system.

III. RESULTS

In Bikaner, EIAs have been criticized for excessively limiting their scope in space and time. No accepted procedure exists for determining such boundaries. The boundary refers to 'the spatial and temporal boundary of the proposal's effects'.[31-40] This boundary is determined by the applicant and the lead assessor, but in practice, almost all EIAs address only direct and immediate on-site effects.[90]

Development causes both direct and indirect effects. Consumption of goods and services, production, use and disposal of building materials and machinery, additional land use for activities of manufacturing and services, mining and refining, etc., all have environmental impacts. The indirect effects of development can be much higher than the direct effects examined by an EIA. Proposals such as airports or shipyards cause wide-ranging national and international effects, which should be covered in EIAs.[91]

Broadening the scope of EIA can benefit the conservation of threatened species. Instead of concentrating on the project site, some EIAs employed a habitat-based approach that focused on much broader relationships among humans and the environment. As a result, alternatives that reduce the negative effects to the population of whole species, rather than local subpopulations, can be assessed.[92] Environmental indicators are simple measures that tell us what is happening in the environment. Since the environment is very complex, indicators provide a more practical and economical way to track the state of the environment than if we attempted to record every possible variable in

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| Volume 1, Issue 2, December 2018 |

the environment. For example, concentrations of ozone depleting substances (ODS) in the atmosphere, tracked over time, is a good indicator with respect to the environmental issue of stratospheric ozone depletion.

Environmental indicators have been defined in different ways but common themes exist in Bikaner.

"An environmental indicator is a numerical value that helps provide insight into the state of the environment or human health. Indicators are developed based on quantitative measurements or statistics of environmental condition that are tracked over time. Environmental indicators can be developed and used at a wide variety of geographic scales, from local to regional to national levels." [1]

"A parameter or a value derived from parameters that describe the state of the environment and its impact on human beings, ecosystems and materials, the pressures on the environment, the driving forces and the responses steering that system. An indicator has gone through a selection and/or aggregation process to enable it to steer action." [2] Environmental indicator criteria and frameworks have been used to help in their selection and presentation.

It can be considered, for example, that there are major subsets of environmental indicators in-line with the Pressure-State-Response model developed by the OECD. One subset of environmental indicators is the collection of ecological indicators which can include physical, biological and chemical measures such as atmospheric temperature, the concentration of ozone in the stratosphere or the number of breeding bird pairs in an area. These are also referred to as "state" indicators as their focus is on the state of the environment or conditions in the environment. A second subset is the collection of indicators that measure human activities or anthropogenic pressures, such as greenhouse gas emissions. These are also referred to as "pressure" indicators. Finally, there are indicators, such as the number of people serviced by sewage treatment, which track societal responses to environmental issues.[41-50]

Environmental indicators, in turn, should be considered as a subset of sustainable development indicators which are meant to track the overall sustainability of a society with respect to its environmental, social and economic integrity and health.

A common framework spearheaded by the European Environment Agency [3] is the "DPSIR" or "drivers, pressures, state, impact, response" framework. Drivers and pressures are indicators of the human activities and resulting pressures on the environment in the form of pollution or land-use change, for example. State and impact indicators are the resulting conditions in the environment and the implications for the health of ecosystems and humans. The response indicators measure the reaction of human society to the environmental issue. Criteria tend to focus on three key areas – scientific credibility, policy/social relevance and practical monitoring and data requirements. The types of indicators selected or developed should be partially based on who will be using the information from the indicators. There are generally three possible audiences to consider, each with different information needs. These audiences are: 1) technical experts and science advisors, 2) policy-makers, decision makers and resource managers, and 3) general public and media.

The technical experts and scientists will be interested in detailed and complex indicators. These indicators should have scientific validity, sensitivity, responsiveness and have data available on past conditions. The audience that includes policy-makers and resource managers will be concerned with using indicators that are directly related to evaluating policies and objectives. They require their indicators to be sensitive, responsive and have historical data available like the technical audience, but they are also looking for indicators that are cost-effective and have meaning for public awareness. Finally, the general public responds to indicators that have clear and simple messages and are meaningful to them, such as the UV index and the air quality index.[9][10] Individual indicators are designed to translate complex information in a concise and easily understood manner in order to represent a particular phenomenon (e.g. ambient air quality). In contrast, indicator systems (or collections of indicators), when seen as a whole are meant to provide an assessment of the full environment domain or a major subset of it (e.g. forests).[51-60]

Some indicator systems have evolved to include many indicators and require a certain level of knowledge and expertise in various disciplines to fully grasp. A number of methods have been devised in the recent past to boil down this information and allow for rapid consumption by those who do not have the time or the expertise to analyse the full set of indicators. In general these methods can be categorized as numerical

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| Volume 1, Issue 2, December 2018 |

aggregation (e.g. indices), short selections of indicators (e.g. core set or headline indicators), short visual assessments (e.g. arrows, traffic signals), and compelling presentations (e.g. maps or the dashboard of sustainability). Many prominent environmental indicator systems have adjusted their indicator systems to include or report solely on a limited "indicator set" (e.g. the OECD's "Key Environmental Indicators" and the "Canadian Environmental Sustainability Indicators") in Bikaner

IV. CONCLUSIONS

In Bikaner, Environmental accounting is a subset of accounting proper, its target being to incorporate both economic and environmental information. It can be conducted at the corporate level or at the level of a national economy through the System of Integrated Environmental and Economic Accounting, a satellite system to the National Accounts of Countries[1] (among other things, the National Accounts produce the estimates of gross domestic product otherwise known as GDP).[61-70]

Environmental accounting is a field that identifies resource use, measures and communicates costs of a company's or national economic impact on the environment. Costs include costs to clean up or remediate contaminated sites, environmental fines, penalties and taxes, purchase of pollution prevention technologies and waste management costs.

An environmental accounting system consists of environmentally differentiated conventional accounting and ecological accounting. Environmentally differentiated accounting measures effects of the natural environment on a company in monetary terms. Ecological accounting measures the influence a company has on the environment, but in physical measurements.

Environmental accounting is organized in three sub-disciplines: global, national, and corporate environmental accounting, respectively. Corporate environmental accounting can be further sub-divided into environmental management accounting and environmental financial accounting.

- Global environmental accounting is an accounting methodology that deals areas includes energetics, ecology and economics at a worldwide level.[71-80]
- National environmental accounting is an accounting approach that deals with economics on a country's level.

  Internationally, environmental accounting has been formalised into the System of Integrated Environmental and Economic Accounting, known as SEEA.[2] SEEA grows out of the System of National Accounts. The SEEA records the flows of raw materials (water, energy, minerals, wood, etc.) from the environment to the economy, the exchanges of these materials within the economy and the returns of wastes and pollutants to the environment. Also recorded are the prices or shadow prices for these materials as are environment protection expenditures. SEEA is used by 49 countries around the world.[3]

- Corporate environmental accounting focuses on the cost structure and environmental performance of a company.[4]
- Environmental management accounting focuses on making internal business strategy decisions. It can be defined as:

  "..the identification, collection, analysis, and use of two types of information for internal decision making:

  1) Physical information on the use, flows and fates of energy, water and materials (including wastes) and

  2) Monetary information on environmentally related costs, earnings and savings."[5]

  As part of an environmental management accounting project in the State of Victoria, Australia, four case studies were undertaken in 2002 involving a school (Methodist Ladies College, Perth), plastics manufacturing company (Cormack Manufacturing Pty Ltd, Sydney), provider of office services (a service division of AMP, Australia wide) and wool processing (GH Michell & Sons Pty Ltd, Adelaide). Four major accounting professionals and firms were involved in the project; KPMG (Melbourne), Price Waterhouse Coopers (Sydney), Professor Craig Deegan, RMIT University (Melbourne) and BDO Consultants Pty Ltd

| ISSN: 2582-7219 | www.ijmrset.com| Impact Factor: 1.52 | Monthly, Peer Reviewed & Referred Journal |

| Volume 1, Issue 2, December 2018 |

(Perth). In February 2003, John Thwaites, The Victorian Minister for the Environment launched the report which summarised the results of the studies.[1]

These studies were supported by the Department of Environment and Heritage of the Australian Federal Government, and appear to have applied some of the principles outlined in the United Nations Division for Sustainable Development publication, Environmental Management Accounting Procedures and Principles (2001).[81-90]

- Environmental financial accounting is used to provide information needed by external stakeholders on a company's financial performance. This type of accounting allows companies to prepare financial reports for investors, lenders and other interested parties.[6]
- Certified emission reductions (CERs) accounting comprises the recognition, the non-monetary and monetary evaluation and the monitoring of Certified emission reductions (CERs) and GHGs (greenhouse gases) emissions on all levels of the value chain and the recognition, evaluation and monitoring of the effects of these emissions credits on the carbon cycle of ecosystems.[2]

REFERENCES

1. MacKinnon, A. J., Duinker, P. N., Walker, T. R. (2017). The Application of Science in Environmental Impact Assessment. Routledge.
2. ^ Eccleston, Charles H. (2011). Environmental Impact Assessment: A Guide to Best Professional Practices. Chapter 5. ISBN 978-1439828731
3. ^ Caves, R. W. (2004). Encyclopedia of the City. Routledge. p. 227.
4. ^ "Principle of Environmental Impact Assessment Best Practice" (PDF). International Association for Impact Assessment. 1999. Archived from the original (PDF) on May 5, 2012. Retrieved September 15, 2017.
5. ^ Holder, J., (2004), Environmental Assessment: The Regulation of Decision Making, Oxford University Press, New York; For a comparative discussion of the elements of various domestic EIA systems, see Christopher Wood Environmental Impact Assessment: A Comparative Review (2 ed, Prentice Hall, Harlow, 2002).
6. ^ See, for example, Environmental movement in the United States.
7. ^ Clark & Canter 1997, p. 199.
8. ^ Rychlak & Case 2010, p. 111-120.
9. ^ Kershner 2011.
10. ^ Daniel, Stavros E; Tsoulfas, Giannis T; Pappis, Costas P; Rachaniotis, Nikos P (2004). "Aggregating and evaluating the results of different Environmental Impact Assessment methods". Ecological Indicators. 4 (2): 125–138. doi:10.1016/j.ecolind.2004.01.003.
11. ^ Hitzschky, K.; Silviera, J. (2009). "A proposed impact assessment method for genetically modified plants (As-GMP method)". Environmental Impact Assessment Review. 29 (6): 348–368. doi:10.1016/j.eiar.2009.02.006.
12. ^ Peche, R., & Rodriguez, E., (2009) Environmental impact Assessment procedure: A new approach based on Fuzzy logic Environmental Impact Assessment review 29:275–283
13. ^ Duarte O. (2000) Técnicas Difusas en la Evaluación de Impacto Ambiental. Ph.D. Thesis, Universidad de Granada
14. ^ ARAI Research Group, Granada, Spain. "Environmental Impact Assessment at University of Granada." Archived 2014-10-25 at the Wayback Machine
15. ^ Wilson, L., (1998), A Practical Method for Environmental Impact Assessment Audits Environ Impact Assess Rev 18: 59–71
16. ^ Elliott, M. & Thomas, I. (2009), "Environment Impact Assessment in Australia: Theory and Practice, 5th Edn, Federation Press, Sydney"
17. ^ The Environment Protection and Biodiversity Conservation Act, Australia: The Department of the Environment, Water, Heritage and the Arts, archived from the original on 7 October 2013, retrieved 9 September 2010
18. ^ The Northern Territory Government, viewed 10 September 2010,
19. ^ The Environment Defenders, viewed 10 September 2010, EDO factsheet Archived 2011-07-16 at the Wayback Machine
20. ^ The Law Handbook, viewed 9 September 2010,

| ISSN: 2582-7219 | www.ijmrset.com| Impact Factor: 1.52 | Monthly, Peer Reviewed & Referred Journal |

| Volume 1, Issue 2, December 2018 |

21. ^ The Government of Western Australia, viewed 9 September 2010,
22. ^ SCC 1992.
23. ^ Cotton, Roger; Emond, D. Paul (1981). John Swaigen (ed.). Environmental Impact Assessment. Environmental Rights in Canada. Toronto, Ontario: Butterworths.
24. ^ Jeffery, Michael I. (1989). Environmental Approvals in Canada. Toronto, Ontario: Butterworths.
25. ^ Emond, D. P. (1978). Environmental Assessment Law in Canada. Toronto, Ontario: Emond-Montgomery Ltd. ISBN 9780920722008.
26. ^ La Forest, Gérard V. (1973). Water Law in Canada. Ottawa: Information Canada.
27. ^ {{{year}}} SCC {{{num}}} (18 July 2012)
28. ^ 2012 SCC {{{num}}}
29. ^ {{{year}}} SCC {{{num}}}
30. ^ CEAA (2012). "What is the Canadian Environmental Assessment Act, 2012?". Basics of Environmental Assessment. Canadian Environmental Assessment Agency.
31. ^ CEAA 2012.
32. ^ Saxe, Dianne (9 August 2012). "Federal environmental assessments will be rushed". Environmental Law and Litigation. Archived from the original on 24 November 2012.
33. ^ Agency, Canadian Environmental Assessment (19 July 2010). "Marathon Platinum Group Metals and Copper Mine Project". www.ceaa.gc.ca.
34. ^ Agency, Canadian Environmental Assessment (13 December 2010). "Pierre River Mine Project". www.ceaa-acee.gc.ca.
35. ^ Agency, Canadian Environmental Assessment (19 January 2012). "Frontier Oil Sands Mine Project". www.ceaa.gc.ca.
36. ^ Alberta, Government of. "Frontier Oil Sands Mine". majorprojects.alberta.ca. Archived from the original on 2017-03-08.
37. ^ Saxe 2012.
38. ^ Host:Allan McFee (9 May 1977). "The Berger Report is released". As It Happens. Toronto. CBC Radio. CBC Radio 1. Archived from the original on 16 January 2013. transcript. Retrieved 9 December 2011.
39. ^ "Statement by Official Opposition Environment critic Megan Leslie on Earth Day". NDP. 22 April 2013. Archived from the original on 21 June 2017.
40. ^ Megan Leslie ({{{year}}}). Question period
41. ^ Wang, Alex (2007-02-05). "Environmental protection in China: the role of law". Archived from the original on 2012-05-16.
42. ^ Gu, Lin (2005-09-29). "China Improves Enforcement of Environmental Laws". China Features. Archived from the original on 2007-02-04.
43. ^ "Ministry of Environment - EEAA > Services > EIA". www.eeaa.gov.eg. Retrieved 2016-06-29.
44. ^ "Ministry of Environment - EEAA > Services > EIA". www.eeaa.gov.eg. Retrieved 2016-06-29.
45. ^ "Ministry of Environment - EEAA > Services > EIA". www.eeaa.gov.eg. Retrieved 2016-06-29.
46. ^ "Ministry of Environment - EEAA > Services > EIA". www.eeaa.gov.eg. Retrieved 2016-06-29.
47. ^ "About MSEA". EEAA. Archived from the original on 2013-01-01. Retrieved 2013-01-03.
48. ^ Watson, Michael (November 13–15, 2003). "Environmental Impact Assessment and European Community Law". XIV International Conference "Danube-River of Cooperation". Archived from the original on March 28, 2007.
49. ^ "EUR-Lex - 31985L0337 – EN". eur-lex.europa.eu.
50. ^ "Environmental Impact Assessment - EIA - Environment - European Commission". ec.europa.eu. Retrieved 2016-06-15.
51. ^ DIRECTIVE 2011/92/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 December 2011 on the assessment of the effects of some public and private projects on the environment from Eur-Lex Archived 2017-09-07 at the Wayback Machine
52. ^ Directive 2014/52/EU amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, 16 April 2014
53. ^ "EUR-Lex – 32001L0042 – EN". eur-lex.europa.eu.
54. ^ "Survey: 9 in 10 investors do not trust corporate ESG claims". edie.net. Retrieved 2016-08-18.

| ISSN: 2582-7219 | www.ijmrset.com| Impact Factor: 1.52 | Monthly, Peer Reviewed & Referred Journal |

| Volume 1, Issue 2, December 2018 |

55. ^ List of criteria for EIA/SEA Archived 2011-07-24 at the Wayback Machine
56. ^ UK Government, Environmental Impact Assessment, updated 15 March 2017, accessed 22 October 2017
57. ^ "LCQ1: Judicial review case regarding the Environmental Impact Assessment reports of the Hong Kong-Zhuhai-Macao Bridge". Press Releases. www.info.gov.hk. October 26, 2011. Archived from the original on January 19, 2012. Retrieved October 27, 2011.
58. ^ "EIA process in Iraq" (PDF). Archived (PDF) from the original on 2017-08-31.
59. ^ "Law No.27 of 2009 for protection and improvement of environment" (PDF). Archived (PDF) from the original on 2017-09-01.
60. ^ "Environmental Legislation guides in Kurdistan Region-Iraq" (PDF). Archived (PDF) from the original on 2017-01-10.
61. ^ "INSTRUCTIONS (NO. 1) OF 2013 ON THE ENVIRONMENTAL IMPACT ASSESSMENT OF PETROLEUM OPERATIONS" (PDF).
62. ^ Shibani Ghosh, "Demystifying the Environmental Clearance Process in India" Archived 2015-02-21 at the Wayback Machine, NUJS LAW REVIEW, January 2, 2015
63. ^ "Why EIA 2017 is a sure-shot recipe for more environmental disasters". Money Control. Retrieved 15 July 2017.
64. ^ "Environmental Websites Leading The Movement Against India's Controversial New Proposal Are Blocked". Vice India. Vice. Retrieved 15 July 2017.
65. ^ "Environmental quality act, 1974 (amendment, 1985) section 34A" (PDF). Archived from the original (PDF) on 2011-07-21. Retrieved 2011-02-15.
66. ^ "Environmental laws in malaysia - Environmental Laws in Malaysia: Time to Walk the Walk Azmi Sharom*". StuDocu (in Indonesian). Retrieved 2016-06-17.
67. ^ LAWS OF MALAYSIA ACT A636 ENVIRONMENTAL QUALITY (AMENDMENT) ACT 1985
68. ^ "Assessing the Application and Assessment of Environmental Effects | Quality Planning". www.qualityplanning.org.nz. Retrieved 2016-06-18.
69. ^ "DIRECTORATE OF ENVIRONMENTAL IMPACT ASSESSMENT / MONITORING". Pakistan Environmental Protection Agency. Retrieved 19 December 2016.
70. ^ Department of Environmental Protection, Russia
71. ^ Central Environmental Authority. "Environmental Impact Assessment (EIA) Procedure in Sri Lanka". Central Environmental Authority. Central Environmental Authority. Archived from the original on 3 November 2016. Retrieved 1 November 2016.
72. ^ MCL LLC. "Evaluation of impact on surroundings". MCL LLC. Eric Firado. Archived from the original on 1 December 2017. Retrieved 1 November 2017.
73. ^ United States. National Environmental Policy Act, P.L. 91-190 Archived 2013-05-16 at the Wayback Machine, 83 Stat. 852, 42 U.S.C. § 4321 et seq. Approved January 1, 1970.
74. ^ U.S. Council on Environmental Quality. "NEPA and Agency Planning." Code of Federal Regulations, 40 CFR 1501.
75. ^ Eccleston, Charles H. and J. Peyton Doub (2010). Preparing NEPA Environmental Assessments: A User's Guide to Best Professional Practices. ISBN 978-1439808825.
76. ^ Eccleston, Charles; Doub, J. Peyton (2012). Preparing NEPA Environmental Assessments: A User's Guide to Best Professional Practices. CRC Press. ISBN 9781439808825.
77. ^ CEQ (2017-07-16). "Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act; Final rule." Federal Register, 85 FR 43304
78. ^ Friedman, Lisa (2017-07-15). "Trump Weakens Major Conservation Law to Speed Construction Permits". The New York Times.
79. ^ Sierra Club v. United States Army Corps of Engineers, Archived 2004-03-28 at the Wayback Machine 701 F.2d 1011, 18 ERC 1748. (2d Cir., 02/25/1983)
80. ^ Ritter, John (2003-06-03). "Lawsuit pits risks and roads". USA Today. Archived from the original on 2011-06-29.
81. ^ "Sive, D. & Chertok, M., "Little NEPAs" and Environmental Impact Assessment Procedures" (PDF). Archived (PDF) from the original on 2012-10-04. Retrieved 2013-01-03.

| ISSN: 2582-7219 | www.ijmrset.com| Impact Factor: 1.52 | Monthly, Peer Reviewed & Referred Journal |

| Volume 1, Issue 2, December 2018 |

82. ^ C.M. Hogan, G. Deghi, M. Papineau et al., Environmental Impact Report for the Pebble Beach Properties project by Del Monte Forest, Earth Metrics Inc. Prepared for the city of Monterey and State of California Clearinghouse (1992)
83. ^ U.S. Federal Register: August 2, 1995 (Volume 60, Number 148, Pages 39326-39337)
84. ^ Sands, P., (1989), The Environment, Community and International Law, Harvard International Law Lournal, 393, p402
85. ^ Weiss, E., (1999), Understanding Compliance with International Environmental Agreements: The Bakers Dozen Myths, Univ Richmond L.R. 32, 1555
86. ^ "Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, 1991)". Unece.org. Archived from the original on 2013-01-26. Retrieved 2013-01-03.
87. ^ Wolfrum, R., & Matz, N., (2003), Conflicts in International Environmental Law, Max-Planck-Institut für Ausländisches Öffentliches Recht und Völkerrech
88. ^ Young, O., (1999), The Effectiveness of International Environmental Regimes, MIT Press
89. ^ Jay, S.; Jones, C.; Slinn, P.; Wood, C. (2007). "Environmental Impact Assessment: Retrospect and Prospect". Environmental Impact Assessment Review. Elsevier. 27 (4): 289–300. doi:10.1016/j.eiar.2006.12.001.
90. ^ Lenzen, M.; Murray, S.; Korte, B.; Dey, C. (2003). "Environmental impact assessment including indirect effects—a case study using input-output analysis". Environmental Impact Assessment Review. Elsevier. 23 (3): 263–282. doi:10.1016/S0195-9255(02)00104-X.
91. ^ Shepherd, A.; Ortolano, L. (1996). "Strategic environmental assessment for sustainable urban development". Environmental Impact Assessment Review. Elsevier. 16 (4–6): 321–335. doi:10.1016/S0195-9255(96)00071-6.
92. ^ Fernandes, João P. (2000). "EIA procedure, Landscape ecology and conservation management—Evaluation of alternatives in a highway EIA process". Environmental Impact Assessment Review. Elsevier. 20 (6): 665–680. doi:10.1016/S0195-9255(00)00060-3.
93. ^ Thissen, WIH; Agusdinata, DB (2008). "Handling deep uncertainties in impact assessment". In Proceedings of the 28th Annual Conference of the IAIA May 5–9, 2008, Perth, Australia. IAIA.
94. ^ Maier, HR; Ascough, JC; Wattenbach, M; Renschler, CS; Labiosa, WB (2008). "Uncertainty in Environmental Decision Making: Issues, Challenges and Future Directions". Publications from USDA-ARS/UNL Faculty. Paper 399. USDA-ARS/UNL Faculty.