

## **Public Participation in Environmental Impact Assessment (EIA) of the Thailand-Malaysia Gas Separation Plant Project**

การมีส่วนร่วมของประชาชนในการศึกษาผลกระทบสิ่งแวดล้อมในโครงการ  
โรงแยกก๊าซไทย-มาเลเซีย

Adinan Wangpittaya

**Lecturer at department of Science, Faculty of Science and Technology,  
Yala Islamic College.**

### **Abstract**

This article aims to study the level of the public participation in the Environmental Impact Assessment (EIA) study of the Thailand-Malaysian gas separation plant project; Chana district, Songkhla province. The study was found that the level of public participation is lower than the developed countries such as United State of America and Canada due to few limitations. Particularly, the project is a new occurrence in Thailand that has carried out the public participation system into the EIA study. Consequently, there were inadequate experience to encourage the public participation and to manage the conflicts between the opponent groups and the project owner. Therefore, the method of the solving problem is that public should participate at the beginning stage; to select the proper area for the project and proceed to the final stage; to take parts in the decision making process for decision of construction. Nevertheless, the latter time, government tried to hold the public hearing, however, is far from success. Consequently, there were many violent situations. In particularly, on December, 20, 2003, there was confrontation and clashed between policemen and opponents group. Furthermore, government should clearly set the public participation process in EIA study and to clearly state that who is the public such as, the affected people, interesting people, academic people, and NGO to participate into the EIA study.

### **บทคัดย่อ**

บทความนี้มุ่งศึกษาระดับของการมีส่วนร่วมของประชาชนในการประเมินผลกระทบสิ่งแวดล้อมโครงการโรงแยกก๊าซไทย-มาเลเซีย อ.จะนะ จ. สงขลา ผลการศึกษาพบว่าระดับการมีส่วนร่วมของประชาชนในการ

ประเมินผลกระทบสิ่งแวดล้อมยังต่ำกว่าเมื่อเทียบกับประเทศที่พัฒนาแล้ว อย่างเช่น สหรัฐอเมริกาและแคนาดา เนื่องจากมีข้อจำกัดในด้านต่างๆบางประการ เช่น โครงการนี้เป็นโครงการแรกที่น่าเอาระบบการมีส่วนร่วมของประชาชนเข้ามาเป็นส่วนหนึ่งในการศึกษาผลกระทบสิ่งแวดล้อม (อีไอเอ) ทำให้มีประสบการณ์ไม่เพียงพอที่ให้ประชาชนเข้ามามีส่วนร่วมและไม่สามารถจัดการความขัดแย้งระหว่างกลุ่มผู้คัดค้านกับเจ้าของโครงการ ดังนั้นวิธีการแก้ปัญหาคือประชาชนต้องมีส่วนร่วมตั้งแต่เริ่มต้นในชั้นการทำเลที่ตั้ง จนถึงขั้นสุดท้ายคือตัดสินใจก่อสร้าง ถึงแม้ว่ารัฐบาลพยายามจัดประชาพิจารณ์ ในภายหลังก็ตาม ก็ไม่ประสบความสำเร็จ ทำให้เกิดเหตุการณ์ความรุนแรงต่างๆ โดยเฉพาะเหตุการณ์ในวันที่ 20 เดือนธันวาคม พ.ศ. 2546 เกิดการปะทะกันระหว่างรัฐกับประชาชน รัฐบาลจึงควรกำหนดวิธีการการมีส่วนร่วมให้ชัดเจนของการศึกษาผลกระทบสิ่งแวดล้อม (อีไอเอ) พร้อมระบุว่าผู้ใดควรเข้ามามีส่วนร่วมบ้าง เช่น ผู้ที่ได้รับผลกระทบจากโครงการ, ผู้ที่สนใจทั่วไป, นักวิชาการและ องค์กรต่างๆที่ไม่ใช่ของรัฐ (NGO) ให้เข้ามามีส่วนร่วมในการศึกษาผลกระทบสิ่งแวดล้อม

### **1. Background of the Thailand-Malaysia Gas Separation Plant Project**

In 1979, the Thai and Malaysian Governments signed a Memorandum of Understanding (MoU), agreeing to explore the possibilities to jointly develop the newly found 7,250 square kilometers JDA gas reserves. In 1990, the two governments agreed to establish the Malaysia-Thailand Joint Authority (MTJA) to oversee, and plan joint activities relating to, development of the JDA. In 1997, the Petroleum Authority of Thailand (PTT) (The name was changed to "PTT Public Co. Ltd.," from October 1, 2001) and the Malaysian state oil company Petronas signed a Head of Agreement (HOA), agreeing to share the benefits accrued from the JDA equally. PTT and Petronas subsequently established a joint corporate venture

company, the Trans Thai-Malaysia (Thailand) Ltd., on February 4, 2000.

The proposed Trans Thailand Malaysia (TTM) Project consists of the construction and operation of a gas pipeline, with offshore and onshore sections, and a gas separation plant (GSP). The first part of the pipeline will consist of a 55 kilometers long pipeline connecting the offshore Block A-18 and Block B-17 gas reserves in the JDA. The second section, 277 kilometers long, will be laid from Block A-18 to the GSP at Songkhla Province. The third section of the pipeline will be laid 96.5 kilometers overland from the GSP and will connect with the Malaysian PGU III pipeline system (Prince of Songkla University: 2002).

The proposed two-unit GSP near the pipe landing area covering an area of approximately 160 acres in village of

Taling Chan Sub-district and Sakom Sub-district in Chana District and Sakom Sub-district in Thepa District, Songkhla is expected to cost US\$ 260 million. It comprises two units each with a natural gas processing capacity of 425 million cubic feet per day. Construction of the first unit is scheduled to come on line in 2001 and the second in 2004-2005. Products from the GSP could be used for combustion to generate energy or as feed materials for petrochemical industries. The Thailand-Malaysia GSP has been designed to produce mainly liquid petroleum gas and natural gas liquids, which would be distributed in the five southernmost provinces of Thailand and the northern part of the Malaysian Peninsular.

According to Ministry of Science, Technology and Environment of Thailand, (MOSTE) (At that times), proclamation on "Types and sizes of projects and activities of which environmental impact statements must be provided", the Thailand-Malaysia Gas Separation Plant Project is a large scale project for which an environmental impact assessment (EIA) study must be undertaken prior to construction. PTT, on behalf of the Trans Thai-Malaysia (Thailand) Ltd., have therefore commissioned the Prince

of Songkla University to carry out these EIA studies for the projects, starting from December 1998, which will be submitted to the Office of Natural Resource and Environmental Policy and Planning (ONEP) within MOSTE for consideration and approval before starting the proposed project (Prince of Songkla University: 2000).

## **2. Public Participation in the EIA Process**

One of the most significant aspects of EIA in many countries is the participation of the affected public in the environmental impact study. Actually, the goals of public participation are to promote public understanding and acceptance by minimizing perceived impacts of the project through education and open discussion. In many countries with democratic political traditions such as in Canada and United States of America, an opportunity for public involvement in EIA has significantly led to the successful protection of environment in their countries.

Although it is widely accepted in developed countries that the benefits of stakeholder involvement in EIA include development that delivers more environmental and social benefits and avoids conflict (Donnelly et al. in

Wood, C: 2003), however there is no tradition of consultation and participation in many developing countries (Lee in Wood, C: 2003). The EIA process can be considered to consist of seven stages: (1) identification of issues and impacts (scoping), (2) conduction of baseline studies of the environment, (3) prediction and evaluation of impacts, (4) mitigation planning, (5) comparison of alternatives, (6) decision making relative to the proposed action, and (7) study documentation through the preparation of an environmental assessment (EA) or EIS. Public participation should be associated with all seven stages for major undertakings (projects, plans, programs, or policies) (Canter, Miller, and Fairchild, in Canter: 1996). If public participation is to be effective in various stages of the EIA process, the public participation program must be carefully planned (Canter: 1996).

The Governing Council of the United Nations Environment Programme (UNEP) adopted goals and principle of EIA as a guide for its member countries in 1987. The relevant principles relating to inter-agency consultation and public participation are as follow:

“Principle 7

Before a decision is made on an activity, government agencies, members of the public, experts in relevant disciplines and interested groups should be allowed appropriate opportunity to comment on EIA.

Principle 8

The decision on any proposed activity subject to an EIA should be in writing, state the reasons therefore, and include the provisions, if any, to prevent, reduce or mitigate damage to the environment.”

UNEP recommends that there are 3 categories of participants who should be involved in the EIA process: (1) those who carry out and manage the EIA; (2) those who can ‘contribute facts, ideas or concern’ to the EIA ‘including scientists, economists, engineers, policy makers and representatives of interested or affected groups’; and (3) the project-approving authorities. The EIA Handbook expresses the role of the public in the EIA process in the following terms:

“The interaction between people and their environment is fundamental to the concept of impact. Some form of

public participation in the environmental impact assessment is the most reliable way of predicting the impact of a project on people. A responsible, interested and participating public is important in environmental management.”

Rajeswari (2000), emphasis on the EIA process would therefore not be complete without the involvement of all relevant parties in arriving at determination of the best possible option for a proposed activity.

Educating the public about a project is an essential first step for all public participation programs (ADB: 1997). A lack of an informed public cannot make educated decisions about a proposal action. The design of any public participation should attempt to identify the public concerned and take the steps required to ensure their fullest participation. According to Rajeswari (2000), emphasis on the EIA process would therefore not be complete without the involvement of all relevant parties in should be arriving at determination of the best possible opinion for a proposed activity.

### **3. EIA and Public Participation in Thailand**

In Thailand, the hierarchy of laws is as follows: (1) The Constitution, the most recent being the 1997 Constitution; (2) “Acts” passed by the Parliament; (3) “Regulations” and “Notifications” enacted by the respective Ministries. EIA become a mandatory requirement in Thailand effective in 1978, with an amendment to the Environmental Quality Act 1975. Following this, the Ministry of Science, Technology and Energy (former of Ministry of Science and Technology and Ministry of Energy) issued the Environment Quality (Prescribed Activities) (Environmental Impact Assessment) Order on 14 July 1981, which took effect on 27 September 1981. Only 10 types of projects are required to submit EIA reports prior to project approval by the permitting agency. The Director General of Environment subsequently issued ‘A Handbook of Environmental Impact Assessment Guidelines’ which provides for the procedures for conducting EIAs.

Nowadays the prescribed activities have been classified into 22 activities according to Ministry of Science, Technology and Environment (MOSTE) (at that times), proclamation on “Types and sizes of projects and activities of which environmental impact statement must be provided prior

to project approval by the permitting agency. There are also seven articles in the Constitution of 1997 which have secured the rights of public and local authorities to participate in the decision making process regarding projects that may impact their living conditions. However, to date, there has still been no specific law to enable these rights. Therefore, there are no set rules as how the public could participate and be heard before the proposed projects take place. Consequently, there has still been unsolved controversy and problems in this country between project proponents and opponents.

A Report of Human Rights Situations in Thailand during 2001 – 2003, was presented by The National Committee of Human Rights of Thailand 2004, which indicated that public participation rights in environmental management, rights in development and public rights was more decreasing. According to Maticchon Newspaper, one reporter reported as follows:

“...during the past five to ten years, it was obviously seen that an infringement of rights, a result of large government’s projects has become one important controversy between government and the

public. The root of the problem is that public participation has been disregarded. Government took no account of the effect of the project on communities and surrounded areas. This led to the controversy and confrontation between the project owner and the community. As a result, a problem and conflict grew and has polarized the community on this issue. An opportunity to compromise, consequently is closed down. Furthermore, Thai government did not convey information openly and completely. A number of complaints related to the above infringement of rights directed by the community at the project owner through government authorities connected. The controversy of Gas Pipeline and Gas Separation Plant Thailand-Malaysia, and the Power Plant at Bor Nork and Hin Krut are obvious instances.”

Major problems of public participation in EIA process were provided by Parichart (2000) in “Good

governance; Public participation and process in environment”. According to her there are eight problems of public participation in Thailand which are as the following:

“(1) problem of steps in public participation process in EIA – In Thailand, currently, public cannot involve in all steps in EIA study and there is no transparently information to convey to public including mostly communication still be one way between developer and public,

(2) problem of basic perception of public, stakeholder, and involver – There were controversies of some doubt such as who has rights to participate? And what is level of participation?,

(3) problem of authority of public participation – Who is authority in public participation management? Currently, Consultant Companies and developers are those who have to manage public participation by carrying out the meeting in order to province and proposed site,

(4) problem of public participation system – The lack of good system for public easily participate in EIA study of interest groups in proposed project,

(5) problem of access to project information, and EIA reports – The access to information and EIA reports of the proposed project is difficult to be provided by developer,

(6) problem of technical capability in EIA and access to data to be selected – Majority of public couldnot understand when they reviewed the EIA reports because there were many technical words in EIA, so that has why public couldnot comment it,

(7) problem of money and time – The high costs of EIA study were obstacle in project proposal. Particularly in Thailand, between 0.1% - 1.0% of all costs of project proposal, as well as the time over six to ten months to be used in EIA study in Thailand,

(8) problem of perception towards steps and scheme of

public participation -The lack of knowledge of EIA process and public participation process such as what is the pattern of public participation.”

#### **4. Public Hearing of the Thailand-Malaysia Gas Separation Plant Project**

According to the Office of the Prime Minister Order on the Hearing of Public Opinions by a Conduct of Public Hearing 1996, a public hearing is a gathering of opinions of those who are concerned or affected by a project which might have impacts on environment, culture, occupations, safety, and ways of life or which might cause damages to a community or society. The purpose is to assist a government in its decision making on the project. Below is sequent of events as regard to the project:

On 14 September 1999, the cabinet passed its resolution on the joint venture of PTT and PETRONAS to proceed its Thailand-Malaysia Gas Pipeline and Gas Separation Plant Projects. It also directed Ministry of Industry to conduct a public hearing on the projects.

On 17 February 2000, Mr. Suwat Liptalop, Industry Minister

appointed a Public Hearing Committee which consists of: (1). General Charan Kullavanich (Chairman); (2). Mr. Wit Jeerapat; (3). Mr. Parote Indharasirisawad; (4). Mr. Amporn Duangpan; (5). Mr. Aziz Pitakkumpon; (6). Mr. Udom Suppakit; (7). Mr. Wittaya Ngantawee; (8). Mr. Manat Sagnuandeekul; and (9). Khunying Tongtip Ratanarat.

On 29 July 2000, the first public hearing was held at Hat Yai Municipality Hall, Hat Yai, Songkhla. Since the first hearing had been disrupted by 2,000 opponents and had to be ended, the Cabinet then directed the Ministry of Industry to complete the hearing by organizing the second public hearing on 21 October 2000 at Gymnasium (Suwannawong Building), Jiranakorn Stadium, Hat Yai, Songkhla. At that time, there were many of the local opposition and local residents tried to shut down and obstruct the public hearing on the proposed project at that area in Hat Yai. Consequently, the violence erupted and some of project opponents were injured and arrested by polices. The public hearing, therefore was carried out for only 25 minutes before it had to be closed in exigency, but the committee still opened for further opinions until 15 November 2000.

On 15 December 2000, The Public Hearing Committee reported the public hearing results to the Industry Ministry.

On 12 January 2001, Mr. Suwat Liptapanlop, Minister of Industry appointed a panel to review the public hearing results led by Office of the Council of State Secretary-General, Mr. Chaiwat Wongwattanasan, to review legal issues and also to consider the impacts the projects would have on the country and the communities in different aspects such as environmental.

On 31 January 2001, the panel handed Industry Ministry its report saying that the public hearing results are satisfactory and suggesting that the results should be used to assist the ONEP in considering the EIA report.

On 8 February 2001, Ministry of Industry permanent secretary passed the report to PTT, TTM (Thailand) Limited's shareholders, to proceed accordingly.

On 22 February 2001, PTT Board of Directors was informed of the projects' status and passed its resolution to pass the public hearing results together with the panel's comments and suggestions to TTM (Thailand) Limited to proceed accordingly.

On 28 February 2001, PTT passed the public hearing results and the panel's comments and suggestions to TTM (Thailand) Limited to proceed accordingly. The company is determined to apply those comments and suggestions achieved by the public hearings, which considered significant, to the proceeding of the projects to ensure the most benefits and the least adverse effects to the country and the communities.

### **5. December Violence**

The situation was exacerbated when, on the 20 December 2003, the communities organized a march to JB Hotel, Hat Yai in Songkhla Province, simply to submit a letter to Prime Minister, Thaksin Shinawatra, requesting him to review his decision about the project. However, as they gathered peacefully in front of the police fencing, some were having dinner with their children, while some were praying to their God for the success of their campaign, a group of over a hundred policemen stormed through the fence and brutally beat up the gathered praying community. From this incident, 12 NGO activists, students and villagers are being prosecuted for obstructing and attacking officers, a claim that does not reflect what actually

happened during the time of the attack. They were sent to jail with their bail being denied. Fifty community members were injured.

There were widespread reactions from both National and International Human Rights institutions, which included the National Human Rights Commission and the United Nations. It has been viewed that the Thai government has violated human rights through the use of all forms of violence, both physical violence and hiding information from the public. This nondisclosure of information conflicts with the 1997 Constitution that promulgates the freedom of people to participate in all forms of development as well as promulgates the freedom of the local communities affected by large-scale infrastructure and development.

From the community's perspective on the incident that occurred in December 2002, Mrs. Areeya Made, one of the community leaders against the gas pipeline and gas separation plant project expressed that "We can no longer trust the government and despite the incident that has happened, our position remains strong that the project cannot go on as the government is being unfair to treat us in this way. It is clear that the government has absolutely no interest in addressing

the problems of the poor and its way of resolving conflicts with the community is to ignore the community" (Sirisook: 2003).

## **6. Conclusion and Recommendation**

Public Participation in EIA report review can be accounted, as a new occurrence in Thailand and its step and action is still limited. Nowadays, public participation in EIA of Thailand is still no more than a rubber stamp for construction projects. The Thailand-Malaysia Gas Separation Plant Project is the first project that implemented the public participation process in an EIA study. But the result is far from success because there was controversy and confrontation between developer and affected (groups such as the public and villagers) in the proposed project site, the EIA report of this project was regarded as unacceptable.

As regards to the study team, the EIA study was carried out by convening a public meeting of the affected people. The first meeting was convened before a handle of social survey. The study team convened monthly meeting of Kamnans (Headpersons of Sub-district) and village headpersons in Chana District in order to give information of public participation in the EIA study and ask for cooperation. The second

meeting was during February and March 1999. The Study Team convened public meeting of 5 Sub-district levels (covering 7 Sub-districts) and a District-level (Chana District).

The purposes of the meeting were to (i) give information of the project and its EIA study to the public, (ii) get feedback from the local villagers on the opinions, concerns, worries, and suggestions of the project. To organize the meetings, the study team cooperated with Chairpersons of Sub-district Administration Organization. Every effort was tried to encourage people to join the meetings. However, only 30-70 villagers joined each meeting. The third meeting was convened at the Chana District, on June 17, 2000, to disseminate the result of the study to the public. Approximately 200 participants attended the meeting.

The study remarked that only public meeting was employed to convey the information of the EIA study and get feedback from the public. Such meeting are not effective enough for conflict resolution and giving information of the project and its EIA study to people throughout the country who were interesting and to more than 2,538 residents in three Sub-districts in Chana in particular.

The study revealed that although

respondents had not been provided with much detailed information from ONEP. The affected people around the proposed project site had some certain degree of knowledge and perception of public participation in the EIA study, review and comment but they are not enthusiastic to apply such knowledge into action. Public participation should be included in all steps of EIA studies. In addition, all stakeholders should be given the opportunities to participate in the EIA process. They need more encouragement from the government and related organizations in such participation. So, the various forms of information about the project need to be given as much as possible.

#### Reference:

- Abbas Pourgerami. 1991. **Development and democracy in the the third world**. USA: Westview Press.
- Abu Bakar Jaafar. 1978. **A review of the proposed EIA procedure for Malaysia. National seminar on the environmental management and assessment**, UNEP/Department of Environment, Petaling Jaya, 16-20 October 1978.
- Baldwin, John H. 1985. **Environmental planning and management**. Colorado: Westview Press

- Barett, B. F. D. & Therivel, R.. 1991. **Environmental policy and impact assessment in Japan.** New York: Routledge, Chapman, & Hall.
- Barrow, C.J. 1997. **Environmental impact assessment: An introduction.** London: A member of the Hodder Headline Group.
- Biswas, A.K. & Qu Geping. 1987. **Guidelines environmental impact assessment for developing countries.** In Biswas, A.K. & Qu Geping. Environmental impact assessment for developing countries. Vol. 19. p. 191-218. London: Tycooly Publishing.
- Canter, L.W. 1996. **Environmental impact assessment.** Ed-2. USA: McGraw-Hill, Inc.
- Chaianan Samutwanit, Bawornsak Uwanno, Pasuk Pongpaichit, Wanchai Wathanasab, Greenapan, R.B., Laxminarayan, R., Kanengnit Sribuaim, Parichat Siwarak, Datrat Sukkamnert, Supakit Nantawarakan, C. Beierle, Thomas, Apichai Panthasem, Pnas Tasneeyanon, Anan Kanchanapan, Suthawan Satianthai. 2000. **Good governance; Public participation and process in environment,** ISEP/GSEI, Bangkok, 18-19 March 2000.
- Chris Kwan. 1997. **Public Participation in Environmental Impact Assessment. Malaysian student law.** April: 46-54.
- Clark, B.D. 1993. The aims and objectives of environment impact assessment. **In PADC Environment Impact Assessment and Planning Unit (Editor).** Environment Impact Assessment: 3-11. Boston: Martinus Nijhoff Publishers.
- Creighton, J.L. 1983. **The use of value; public participation in planning process.** In Daneka, G.A. , Garcia, M.W. & Priscoli, J.D. (editor.). Public involvment and social impact assessment; 1-10 Boulder, Colorado: Westview Press.
- Fagence, M. 1977. **Citizen participation in planning.** Oxford: Pergamon Press.
- Fanning, Odom. 1975. **Man and his environment: citizen action.** New York: Harper & Row.
- Glasson, J., Therivel, R. & Chadwick, A. 1994. **Introduction to environmental impact assessment: Principles and**

- procedures, process, practice and prospects**. Vol. 1. London: UCL Press.
- Institute of Environmental Assessment. 1993. **Quality Assurance in EIA – The Role of Government**. Seminar Quality Assurance in EIA, p. 1-4.
- Lawrence, D.V. 2003. **Environmental impact assessment: Practical solutions to recurrent problems**. New Jersey: John Wiley & Son, Inc.
- Mohd. Sayuti Sapeai. 1994. **Public participation in environmental impact assessment: Implementation in Malaysia with emphasis on detailed EIA study report**. Master thesis. Universiti Kebangsaan Malaysia.
- National Committee of Human Rights of Thailand. 2004. **The human rights situation in Thailand 2001 – 2003**. Matichon, 1 August: 9.
- Ortolano, L. & Shepherd, A. 1995. **Environmental Impact Assessment**. In Vanclay, Frank & Bronstein, A.D.(Editor.). Environmental and social impact assessment. p. 3-30. New York: John Wiley & Sons Ltd.
- Pranee Pantumsinchai & Thongchai Panswad 2003, **Improvement of EIA process in Thailand**. Technical Report. Ministry of Natural Resources and Environment, Thailand.
- Prince of Songkla University. 2002. **The Environmental Impact Assessment Study Report: The Thailand-Malaysia Gas Separation Plant Project**. Songkhla: Prince of Songkla University.
- Rajeswari Kanniah. 2000. **Public Participation in the Environmental Impact Assessment Process in Malaysia**. The Malayan Law. Vol. 3: cxxxiv-clx.
- Roberts, R. 1995. **Environmental Impact Assessment**. In Vanclay, Frank & Bronstein, A.D.(Editor). Environmental and social impact assessment. p. 221-246. New York: John Wiley & Sons Ltd.
- Sewell, W.R.D. & Coppock, J.J. (Editor). 1977. **Public participation in planning**. London: John Wiley & Sons.
- Sirisook 2003. **Thai-Malay Gas Pipeline Project and Community Rights Violation in Thailand**. Forum News Vol. 16 No. 2 Aug-Sep. (online) <http://www.apwld.org> (13 July

- 2004).
- Taweewong Sribut. 1998. EIA;  
**Environmental impact  
assessment.** Bangkok: Mind  
Publishing.
- Vanclay, F. & Bronstein, D.A. (Editor).  
1995. **Environmental and  
Social Impact Assessment.**  
Chichester: John Wiley & Sons  
Ltd.
- Wathern, Peter (Editor). 1998.  
**Environmental Impact  
Assessment; Theory and  
Practice.** United Kingdom:  
Biddles Ltd.
- Word Bank. 1993. **Public Involvement  
in Environmental Assessment:**  
Requirements, Opportunities,  
and Issues. Environmental  
Assessment Sourcebook Update.  
Washington DC: Word Bank.
- Wood, C. 2003a. **Environmental  
Impact Assessment in  
Developing Countries:  
An Overview.** Conference on  
New Directions in Impact  
Assessment for Development:  
Methods and Practice.  
University of Manchester. 24-25  
November.
- Wood, C. 2003b. Environmental  
**Impact Assessment: A  
Comparative Review.** Ed- 2.  
England: Pearson Education  
Limited.
- Yusuf J. Ahmad & Sammy, G.K. 1985.  
**Guidelines to Environmental  
Impact Assessment in  
Developing Countries.**  
London: Hodder and Stoughton.

