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Public Participation and Community Involvement in Environmental and Social Impact Assessment in Developing Countries

An Application of the Vroom-Yetton Model Using Bangladesh as a Case Study

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Abstract: Involving community in decision making process is an integral part of environmental and social impact assessment (EIA and SIA) in developed countries. While EIA and SIA have now been firmly established in planning process in developing countries, community participation in project inception, implementation and monitoring remains a contentious issue. Recently, we have seen the adoption of Vroom-Yetton normative decision model in developing guidelines for managers that allow them to determine the level of public involvement in natural resource decision making. This paper examines the adaptability of Vroom-Yetton model in EIA and SIA processes in Bangladesh. Based on thorough examinations of major EIA guidelines and a number of recent EIAs and SIAs, and discussions with EIA practitioners in Bangladesh, this paper, firstly, explores the status of community participation in EIA and SIA in Bangladesh, and, secondly, it examines if Vroom-Yetton model can make any meaningful contribution to deciding the extent to which local communities may be incorporated in environmental assessment process. This article argues that there is no substitute for wide community consultation and participation in a densely populated country like Bangladesh where any development interventions are likely to have significant impacts on people and the natural environment.

Keywords: Vroom-Yetton Model, Community Participation, Bangladesh, Environmental Conservation Act 1995
Environmental Conservation Rules 1997

Introduction

IN THE RECENT past the governments in developed and developing countries have provided legislative mandate for community participation (CP) in environmentally and socially significant decisions. While various forms of community involvement have become firmly established in developed countries and community's role in EIA and SIA has been thoroughly explored in recent literature (Burdge & Robertson, 1990; Vanclay & Bronstein, 1995; Cox et. al., 2000), it remains a less investigated area of development intervention in developing countries. This paper examines the status of community participation in Bangladesh as highlighted in various guidelines. It reports two examples of EIA and SIA where community participation made significant contributions in determining the final outcomes. Recently, we have seen the adoption of Vroom-Yetton (1973) normative decision model (Vroom and Yetton, 1973) in developed countries to develop guidelines for managers to help determine how and when to involve the public in natural resource decision-making (Daniels et.al., 1996; Lawrence and Deagen, 2001; Robinson, undated; Wright, 2005). This paper will explore the adaptability of Vroom-Yetton model in developing countries with special

focus on community participation in EIA and SIA in Bangladesh.

Research Methods and Data

A thorough analysis of contents of EIA legislation and five major EIA documents were conducted to determine the status of community participation in Bangladesh. This research adopted a case study approach to further understand how CP has been incorporated in the planning and implementation process. An indepth examination of two of the biggest development projects - the Jamuna Bridge Project and Khulna Jessor Drainage Rehabilitation Project - where CP played a role has been done. While the contents analyses shed lights into the legislative side, the case studies provided an insight into the applied side of relevant legislation and guidelines. Vroom-Yetton Model was then examined through the review of relevant literature to determine its adaptability to a developing country - Bangladesh.

About The Vroom-Yetton Model and its Application in Natural Resource Management

Vroom-Yetton (1973) decision model was initially developed to assist managers in corporate world to determine the level of involvement of subordinates



to improve the quality of decision-making. This was later modified and adapted to community participation in natural resource management in developed countries. According to Vroom and Yetton (Vroom and Yetton, 1973; Vroom and Jago, 1988) managers should ask a number of questions (see later) in order to determine the level of subordinate involvement in decision-making process. Answer to each question will direct managers toward certain actions and finally help adopt a consultation strategy.

This process leads to a number of options for involving others in decision process (Vroom & Yetton, 1973; Vroom & Jago, 1988; Thomas, 1990; Daniels et. al., 1996; Robinson, undated). The options, as variously termed by the above mentioned authors, are as follows:

1. The manager takes the decision independently without any consultation or gets more information from public but may or may not inform public of the decision ('Autocratic 1' (A1) & 'Autocratic 11' (A11), Vroom & Yetton, 1973) or 'Autonomous managerial decision' (A1) and 'Modified autonomous managerial decision' (A11) (Thomas, 1990; Daniels et.al. 1996) or 'INFORM & CONSULT' (A & B) (Robinson, undated).
2. The manager consults individuals or groups but take decision alone ('Consultative 1' (C1) and 'Consultative 11' (C11) Vroom & Yetton, 1973) or 'Segmented public consultation' (C1) and 'Unitary public consultation (C11) Thomas, 1990; Daniels et.al. 1996) or 'INVOLVE' (Robinson, undated).
3. The manager consults community and uses community inputs toward an agreed resolution ('Group 11' (G11) Vroom & Yetton, 1973) or 'Public decision' (G11) (Thomas, 1990; Daniels et.al. 1996) or 'PARTNER' (Robinson, undated).

This normative decision-making model was widely critiqued, tested (including in the natural resource management sector in developed countries) and refined (Vroom & Jago, 1978; Field, 1979; Brown & Finstuen, 1993; Field & Andrews, 1998; Daniels et.al., 1996; Wright, 2004). Research revealed that companies that applied Vroom-Yetton Model in the decision-making process had better managerial success than those that did not use it (Vroom-Yetton, 1988). Subsequent studies also suggested that managers should be aware of the model and its potential use in deciding whether consultation is required and if yes, what level of consultation is appropriate (Field, 1992; Daniels et.al., 1996). This model has so far been tested in developed countries. This paper develops a modified version of the model

to reflect the needs of the developing countries using Bangladesh as a case study.

Status of Community Participation in Bangladesh

Legislative Framework of EIA in Bangladesh

The Environmental Conservation Act 1995 (ECA, '95) provides the legal basis for environmental and social impact assessment (BCAS, 1999). While there is no mention of SIA in ECA '95, social issues have been recognised as central to EIA. As a result, any EIA conducted in Bangladesh has a separate section on socio-economic implications of projects (Momtaz, 2005). Department of Environment (DOE) is the government agency with the authority to enforce ECA'95 and approve EIAs conducted for projects. Community participation has been indicated in DOE guidelines as an important component in EIA process and shown to be firmly established in the project cycle (Momtaz, 2002).

Provision of Community Consultation in EIA/SIA Guidelines

Flood Plan Co-ordination Organization (FPCO) Guidelines for EIA

These are the first EIA guidelines in Bangladesh published in 1992 for flood control, irrigation, and water management projects (Flood Action Plan or FAP). The guidelines were updated in 2001 with greater emphasis on people's participation (WARPO, 2001). The document acknowledges that active participation of stakeholders is mandatory in water resources planning and management, and must therefore form an integral part of all environmental assessments. The Guidelines clearly outline steps to involving people in initial environmental examination (required for small scale projects with no significant environmental impacts) and in environmental impact assessment.

Guidelines for Environmental Assessment 1992

Local Government Engineering Department, under the Ministry of Local Government and Rural Development, has the responsibility for small-scale water resources development projects. The main objective of the projects is to rehabilitate and upgrade approximately 400 projects for flood control, drainage improvement and water conservation. The guidelines indicate that these projects would lead to command area development for agricultural production, which is to be achieved through

beneficiary participation and institutional development (LGED, 1992).

Environmental Management Field Handbook for Rural Road Improvement Projects 1998

This Handbook was written for United States Agency for International Development (USAID) and CARE Bangladesh, for Integrated Food for Development Projects (Khan & Fitzcharles, 1998). The main objective of this project was to improve rural road network. The Handbook placed significant emphasis on community participation in initial environmental examination (IEE). The checklist for IEE identifies human related parameters along with ecological parameters and physico-chemical parameters, and uses a semi-structured interview for community consultation.

Guidelines for Participatory Water Management by Ministry of Water Resources

Recently, Bangladesh government has initiated discussions to provide a legal framework to people's participation in water sector. With this objective in mind the Ministry of Water Resources released these guidelines to ensure community participation in water resource management programs (Ministry of Water Resources, 2001). It proposes to establish Water Management Organizations consisting of local stakeholders and project affected people at various administrative and geographic levels.

DOE's EIA Guidelines for Industries

As indicated earlier, DOE guidelines require that the proponent will incorporate EIA into project planning and maintain liaison with the DOE, concerned departments, local people and non-governmental organizations (NGOs) (DOE, 1997). The document suggests that EIA should involve community in the decision making process as people are the ultimate recipient of economic benefits and environmental damages. For effective and meaningful community involvement "it is necessary to communicate with as many people as possible, as early as possible, and through as many different ways as possible" (DOE 1997, p.34). DOE has developed a long list of techniques for public participation.

CP in EIA and SIA: Two Case Studies from Bangladesh

Case Study 1: Community Participation in Jamuna Bridge Construction

Project description: The project was the biggest infrastructure development in Bangladesh with an

estimated cost of \$700 million. The project objective was to construct a 4.8 km long bridge over the river Jamuna to carry a four lane road with the provision to carry a metre-gauge railway, electric power interconnector, telecommunication cables and a gas pipeline. Associated works included construction of river regulator and east and west approach roads. Asian Development Bank (ADB) was a major funding source for this project.

Social impacts: The team assigned with the responsibility to conduct EIA for the project identified a number of potential social impacts during the conduct of EIA. The major ones are: (1) the project will introduce large number of external labourers. They are likely to enjoy a better economic condition and standard of living than the local population who are about to be relocated voluntarily or forcibly. This has the potential to create inequality in the society and resentment among the Project Affected Population (PAP); (2) some 2,784 ha of land were acquired which affected 6,156 households directly and 5,906 households indirectly. In response to these revelations the authority commissioned a separate compensation and resettlement-planning study to define and identify project affected people and develop Resettlement Action Plan (RAP).

Community involvement: Substantial public consultation and involvement took place during the EIA and other planning studies, especially during the socio-economic/population surveys at the scoping phase. Consultation included: (a) visits to the project sites and discussions with the project affected people; (b) formulation of village committees for efficient liaison and grievance accounting procedure with the participation of representatives of PAPs, social leaders, village elders, interested NGOs and members of the local organizations; (c) noting and analysis of responses; and (d) use of the ideas in the preparation of the RAP. Project affected people were categorized according to the extent of loss incurred by the proposed development and provisions and entitlements were determined accordingly through the development of a resettlement policy matrix (RPM). A section of the RPM has been shown in Figure 1. This matrix was based on wide community consultation and the information collected through surveys.

Case Study 2: CP in Khulna Jessor Drainage Rehabilitation Project (KJDRP)

Project description : This project is located in the south-western part of Bangladesh. The project area comprises numerous tidal rivers and creeks, which provide a drainage network to a system of embanked hydrological units or polders. Drainage is the main concern for water management in the project area.

The construction of embankments in the sixties under the coastal embankment project greatly reduced the volumes of water entering and leaving the project area during the tidal cycles. This resulted in gradual

siltation of the drainage networks and drainage congestion. Waterlogging took away 20 percent of land from agricultural production and forced 78 percent of the households to migrate.

Figure 1: Resettlement Policy Matrix for Jamuna Bridge Railway Link Project

Description of category	Provisions and Entitlement	Comments
Land owners losing only a portion of their agricultural land. Left with residue of two or more acres with H/H of 6 persons. A fraction thereof for each additional person.	Cash compensation for land Or as for categories 2 and 3 below	Land owning categories who are full-time farmers (and not landholders) are extremely vulnerable to land acquisition or significant magnitude as they rarely have secondary sources of income.
Owners of ag. Land with up to 6 H/H members who will be left with less than two acres, or proportionately more for each additional person.	Cash compensation for land acquired and additional cash to purchase similar land elsewhere.	PAPs to be informed that they can look for agricultural land for sale, individually or in groups. Authority will assist them to purchase the land.
Owners losing all their land	As for category 2 above	As for 1 and 2 above
Sharecroppers with no land	Receives cash compensation for homestead and house. Receives priority offer to lease land along approach roads. Proposals for vocational training to be prepared with help of NGOs.	
Shopkeepers, kiosk and stall owners.	Cash compensation for moving business.	
Homestead owners losing house and land on which it stands.	Can get compensation for (a) land, (b) house, both at replacement value.	
Squatters and farm labourers	Receives cash compensation for homestead and house. Receives priority offer to lease land along approach roads. Proposals for vocational training to be prepared with help of NGOs.	
Weavers and other industries and artisans	Cash grant. Vocational training. Some land will be made available by the authority on both sides and at optional settlement sites.	
People adversely affected by bridge, i.e., change in water levels upstream or downstream, or in unforeseeable ways.	Cash compensation and assistance to re-establish workshops at new sites selected by them.	Legal agreement between the authority and the government to be drawn up to protect interests of all persons who may be adversely affected by the bridge and allied civil works.
Persons whose property has already been acquired for the project.	Assistance to mitigate impacts, e.g., through provision of pumps.	

Source: Jamuna Bridge Authority 1998, Summary Environmental Impact Assessment of the Jamuna Bridge Railway Link Project in the People's Republic of Bangladesh, p. 357.

In 1995, the government of Bangladesh, with financial support from the Asian Development Bank (ADB), initiated the KJDRP to find more permanent

relief to the suffering of the local people. The Ministry of Water Resources assigned Centre for Environmental and Geographic Information Services

(CEGIS) to conduct an independent EIA and SIA study. CEGIS also received financial and technical support from USAID and World Bank.

Social and economic Impacts: All options of interventions were likely to have positive and negative socio-economic impacts in the form of impacts on occupation, income, capture fisheries, the possibility of homestead inundation, health, education and women's activities (CEGIS 1998, Momtaz, 2003a). Identification of potential changes in living conditions in project area for different options was largely based on people's perception of change. The study team used a multi-criteria analysis in order to ascertain relative preference of the people for the various options.

Community Consultation: The study started with intensive consultation with local people and non-governmental organizations (NGOs). Raid Rural Appraisal, conducted in 60 different spots, involved extensive discussions with people belonging to various socio-economic strata and played an important part in identifying project-affected people. Separate sessions were held with various socio-economic groups to facilitate maximum participation. One of the results of the public participation was the realization by the study team that the general public had an option to offer for addressing the waterlogging problem in the project area which was different from the options resulting from the feasibility studies. This community-identified option was treated equally at the 'consideration of alternatives' phase in the EIA process.

One important outcome of the consultation process was that in the recommendations of SIA/EIA, CEGIS proposed the formation of water management associations (WMAs) in various parts of the project areas consisting of local community members. CEGIS recommended that the WMAs would have the responsibility to supervise and monitor the project area during and after the intervention.

Lessons Learnt from Bangladesh Experience

Community Participation is well Established in Guidelines

As yet, there are no legislative directives for community participation in Bangladesh. ECA '95 does not provide any clear instructions on community participation. However, as demonstrated earlier, it is well established in guidelines developed by various leading organizations. International donor agencies and development partners (e.g. USAID, CARE, World Bank, Asian Development Bank) played significant role in the formulation and implementation of community involvement processes in EIA and SIA.

Despite the fact that provision for community participation is well embedded in decision-making process, a solid legislative mandate is necessary in developing countries. This will allow the governments and their environmental agencies to bring all community involvement processes within the legal framework.

Community Participation Made Significant Contribution to Decision-making

In the case studies, people's participation played an important role in the identification, evaluation and assessment of impacts. Community opinions also influenced outcomes of decision-making in terms of preferred options, development of mitigation measures and environmental management methods. In the end community participation paved the way for enhancement of positive impacts and mitigation of negative effects. It is not enough for developing countries to have legislation and guidelines for CP which most of the Asian countries have; more important perhaps is to put mechanisms in place so as to make CP effective.

Community Participation and Involvement Created Sense of Ownership and Resulted in Better Cooperation

One of the important aspects of community participation is collecting and sharing information and gain understanding of the community values and aspirations (Mitchell, 2002). Public involvement is also about a greater recognition of the fact that local people have wealth of local knowledge that is acquired through trial and error in the field over a long period of time. This knowledge can be integrated into the scientific knowledge of EIA and SIA and help develop a management plan that is appropriate for each situation. Furthermore, community involvement is about seeking opinion of the community on various aspects of project impact. Formation of community groups for the purpose of ongoing communication created a sense of ownership in the community and empowered them with the ability to influence the outcomes of decisions that had the potential to transform the community for good.

NGOs can play an Important Role in Organizing Local People for Involvement in Decision-making Process

Because of their grass-roots base non-governmental organizations have the ability to organize the project-affected people and mobilise local resources. NGOs have established themselves as alternative development partners in Bangladesh. So far, they

have been quite successful in bringing people above the poverty line through various cooperative programs. The same spirit of cooperation can be utilized in ensuring sustainability of development projects.

Numerous NGOs are working in developing countries. Many of them are local branches of international donor agencies like Oxfam, CARE, and CARITAS etc. Some local NGOs like Grameen Bank and BRAC, have emerged as significant powers in mobilizing local people and resources (Holcome, 1995; Johnson and Rogaly, 1997; Momtaz, 2003b). These organizations operate very closely with local people as they provide credit and other assistance to groups and individuals. Developing countries can utilize this local force in order to ensure effective participation in project development and implementation. There is hardly any reason for governments and proponents not to involve people that are already well organized and have the potential to make positive contribution to decision-making. This can only enhance the benefits of projects through establishment of trust, sharing of knowledge and empowerment of local people.

Donor Agencies should be given a Supervisory Role

As stated earlier, donor agencies and development partners helped develop community participation framework in developing countries. They have significant financial involvement in all major development activities. EIA and SIA have become mandatory in major interventions funded by these organizations as is community participation. Governments should allow these organizations to maintain their supervisory role in the implementation of EIA and SIA of large projects to ensure their sustainability.

Adaptability of Vroom-Yetton Decision Tree in Developing Countries: The Case of Bangladesh

In this section I have asked six questions (modified from Vroom-Yetton by Robinson to adopt to natural resource management situations) and explained what should be the answer to each question in the context of development intervention in Bangladesh (Figure 2) and what should be the role of community participation in decision-making in developing countries, especially in the countries of South and Southeast Asia that have many things in common.

1. Does the manager have sufficient information to make a high quality decision? No. In developing countries lack of information, especially in rural areas, has always been a

major concern. Projects proponents are likely to operate in the backdrop of such paucity of information (Burdge and Robertson, 1990). The manager will seek to collect as much information as possible. Field-level workers will play an important role in this pursuit. Community leaders will also be valuable source of information.

2. Is the problem structured such that there is space for alternative solutions? Yes. It is mandatory for all major projects to formulate a set of alternatives and respective solutions. The onus is on the proponent to justify the preferred option and respective solution. As demonstrated in the case studies, community is a potential source of information to formulate appropriate alternatives.
3. Is public acceptance of the decision critical to effective implementation? Yes. As mentioned earlier, in developing countries, most of which are densely populated, project interventions are often likely to have significant impact on people. Hence, peoples' acceptance is usually crucial for successful implementation of projects. Public acceptance is essential for decisions that are meant for them and it is highly likely that community involvement will make acceptance easier.
4. If public acceptance is necessary, is it reasonably assured if the manager decides alone? No. In developing countries managers are often city-based and have no direct contact with local people. Managers have to rely much on field-level officials for information and therefore are largely dependant on them. The manager cannot decide alone as he/she does not have readily available information. Hence involving community is a must.
5. Are the public and stakeholders willing to engage in a dialogue in order to improve the situation? Yes. A positive aspect of long-term involvement of non-governmental organizations in many developing countries of is that they have been able to organize people at local level under the umbrella of various cooperative movements. People are better informed and well organized today than they were before the emergence of NGOs as an alternative means to channel resources to the grassroots level (Rahman, 2003). And it is highly likely that community would seek to exert influence over projects development and implementation. There is no lack of enthusiasm among public about engaging in dialogues (as demonstrated in the case studies), as they are the ones that have to live with the outcomes of decisions.

helps demonstrate the inevitability of community participation in resource management decision-making. The managers, however, have the opportunity to and the essential task of, determining the process, nature and amount of public involvement that would best serve their purpose of ensuring environmentally and socially acceptable outcomes.

Conclusion

Despite the absence of specific legislation in Bangladesh, importance of community consultation has been recognized in all major documents. Donor agencies and local non-governmental organizations (NGOs) are playing catalyst role in the implementation of community participation. In major development projects community consultation has led to consultative processes that started in the policy formulation phase, continued into decision-making, implementation and monitoring. As discussed in the case studies, community groups are actively involved in the continuous monitoring of post project situations. Through community consultation

managers provided information to project affected people and stakeholders, collected information and involved community to secure a better decision. This democratic process was instrumental in gaining public support. The stakeholders became partners and gained ownership of the development projects. In the end public participation empowered people which was manifested in people's ability to influence decision outcomes. Project intervention was not seen as an external imposition rather it became embedded into the community. In this article Vroom-Yetton Model has been tested in the context of environmental decision-making in Bangladesh. It is observed that the questions asked by Vroom-Yetton (in a modified form) are relevant and help emphasise the role of community participation in a country where development projects are more often than not environmentally and socially significant. This study further demonstrates that there are certain aspects of CP in Bangladesh that establish examples for the developing countries that are faced with the dilemma of economic development and environmental protection.

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