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A REVIEW OF DISTRICT ROAD PLANNING IN UGANDA: ENVIRONMENTAL AND COMMUNITY CONCERNS

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ABSTRACT

Roads contribute to socio-economic welfare and road development is therefore increasing in Uganda and other developing countries. However, road construction can also have negative impacts. A common problem is that contractors neglect restoration of gravel, or borrow pits. Abandoned open pits expose communities to various hazards, mosquito breeding in water filled pits and the subsequent risk of malaria being the most prominent. Two reasons for this problem is lack of participation of the environment sector in planning and monitoring of road construction projects and that concerns of the affected communities are not taken into account. The overall aim of this study was to secure incorporation of environmental and community concerns into planning and implementation of road projects in Uganda. Information on the levels of involvement of District Environment Officers (DEOs) in planning and monitoring of road construction projects was obtained through a questionnaire. The Ugandan planning framework and literature on participatory planning was also reviewed. According to the planning framework, which is based on the principles of participatory planning, DEOs should be involved at all stages of planning and monitoring of road projects. The study findings show that higher levels of borrow pit restoration were achieved when the planning framework was adhered to and DEOs were highly involved in planning and monitoring activities. However, many DEOs are not adequately involved, often because they are not invited to the planning process by the sectors in charge. The study revealed a correlation between low involvement of DEOs and low levels of borrow pit restoration. It is concluded that in order to secure incorporation of environmental and community concerns

into road projects, DEOs need to be involved at all phases of planning and implementation in accordance with the established planning guidelines in the local government management and service delivery manual.

Key words: Participatory planning, environmental and community concerns, borrow pit restoration

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1. INTRODUCTION

Infrastructural services, especially roads, are limited in most rural areas of developing countries. Roads stimulate agricultural investment, reduce transport costs, increase competition, and reduce marketing margins (Hine & Ellis 2001). In a study by Pinstrup-Andersen and Shimokawa (2006), data from 44 developing countries showed a correlation between rates of return from the agricultural sector and infrastructural development. The same study showed that investments in rural roads were three times more effective in reducing the number of poor Ugandans than investments in urban roads.

Road development, however, is also associated with negative effects on ecosystems, modification of animal habitats and increased accidents (Trombulak & Frissell 2000). Another problem is that borrow or gravel pits are not restored but left open after construction work has finished. This is a common practice in Uganda's road construction industry (Uganda National Roads Authority 2011). If water collects in them, abandoned borrow pits provide ideal conditions for mosquito breeding and thus for spreading malaria (Lindblade et al. 2000). This puts communities at risk. According to Kasirye and Ahaibwe (2011), about thirteen million cases of malaria are recorded annually in Uganda and children especially are heavily affected by the disease. The presence of unrestored borrow pits would be expected to aggravate or maintain this problem. This implies that Uganda may not achieve the target of beginning to reverse incidences of malaria under the UN Millennium Development Goals by 2015 of which it is a member state. Other problems with borrow pits are loss of land and vegetation, destruction of scenic beauty, accidents and loss of archaeological sites (Aryaguka et al. 2007; African Development Fund 2009; African Development Bank Group 2011; Uganda National Roads Authority 2011).

According to the African Development Bank Group (2011), occurrences of these problems are partly caused by lack of involvement of the environmental sector at the beginning of the road project cycle. Another reason for prevalence of these undesired effects, as mentioned by Mendoza et al. (2007), is that developers of road projects tend to neglect public participation, which would otherwise integrate concerns of the marginalised poor communities into the road design and development. In order to achieve adequate stakeholder participation, Uganda introduced participatory planning in 2008 at all levels of local government planning (Adoch & Ssemakula 2011).

However, its adoption is still low. In particular, participatory planning is insufficient in Uganda's road sector and often communities do not participate during the project cycle. As such, environmental and community concerns and proposed remedies are seldom taken care of during the planning and implementation processes. The communities, whose participation is critical but normally limited, are the ones who suffer the consequences related to unrestored borrow pits. According to the Ministry of Local Government (2009), District Environment Officers (DEOs) are responsible for integrating environmental and community concerns into the district development plan for implementation. They also represent these interests in road planning for road construction. In reality, however, DEOs are not always invited to the planning table.

The overall aim of this study is to secure incorporation of environmental and community concerns into planning and implementation of road construction projects. This will enhance restoration of borrow pits for the benefit of project affected communities. Specifically, the objectives of this study are to review the Ugandan planning framework with respect to road

construction, describe how implementation of the planning framework is done in reality, highlight on the consequences of non-involvement of the environment sector and make suggestions for improvement.

2. METHODS

This study was a desktop research. It involved review of the planning framework for Uganda's local governments as well as literature on participatory planning and various cases of road construction projects in Uganda and other countries.

To ascertain the level of borrow pit restoration and involvement of DEOs in planning and implementation of road activities, a questionnaire with mainly open ended questions (see Appendix I) were sent by email to sixteen randomly selected DEOs. Twelve of them responded. For ethical reasons, the responses were treated with confidentiality. In the analysis, the core meanings of the responses were found and then grouped together into categories.

3. UGANDAN CONTEXT AND PLANNING FRAMEWORK

In Uganda, planning as an entity is provided for under the Constitution of the Republic of Uganda (1995) through establishment of a semi-autonomous body, the National Planning Authority (NPA). NPA's function is production of National Development Plans (NDPs) and to assist districts in production of their development plans which should be harmonious with the NDP (National Planning Authority Act 2002). Uganda is currently divided into 112 districts (Uganda Bureau of Statistics 2012) as shown in fig 1.

The National Environment Act (1995) provides for environmental planning at district levels. The law mandates district local governments to prepare three year District Environment Action Plans (DEAPs). The DEAP, which is derived from village level planning, is then integrated into the five year rolling District development plan which should contain future road projects and their mitigation measures.

The National Environment Act (1995) and National Planning Authority Act (2002) are responsible for establishment of environment sectors and district planning units, respectively. At district level, DEOs and district planners work under guidelines of their respective semi-autonomous bodies, the National Environment Management Authority (NEMA) and NPA.

Several Ugandan districts have local legislations which require District Environment Committees (DEC) to ensure integration of environmental concerns in all plans and projects approved by their councils. These legislations also hold contractors accountable for borrow pit restoration and other mitigation measures (Masindi District Local Government 2011).

The country's roads fall into three categories; national, district and urban roads. Their respective distances in kilometres are 9,500, 23,200 and 3,000 (Kumar 2002). Administratively, Uganda has a decentralised system of government where road planning and implementation are mostly done at district and lower local levels (Local Government Act 1997). However, planning for, and implementation of, national roads remain the role of the central government.

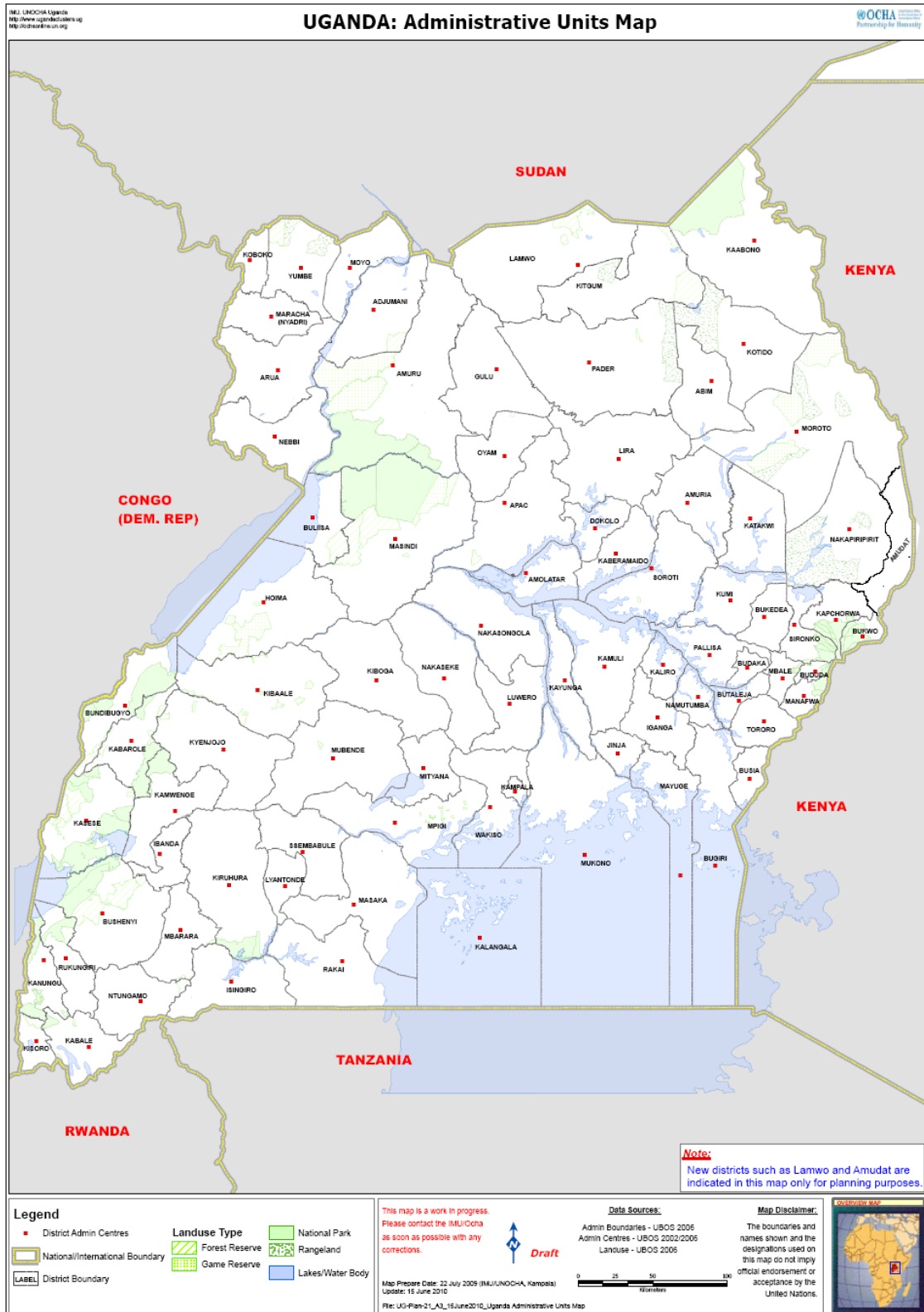


Fig 1. District map of Uganda (Source: Abim District Local Government 2012).

According to the Environment Social Management Framework (ESMF), road construction projects implemented in Uganda fall into one of three categories (Ministry of Local Government 2009):

Category A: If there is sufficient reason to believe that projects will have significant impacts on the environment, they should be subjected to full Environmental Impact Assessment (EIA).

Category B: Projects in which supplementary information is required from DEOs in form of environment statements comprising of mitigation measures to be addressed by contractors.

Category C: Road projects that require neither EIA nor simple mitigation measures.

DEOs, as stipulated in the National Environment Act (1995), should be involved in planning for road projects by advising the DEC on approval of road projects in which environmental concerns have been integrated. The roles of DEOs can be summarised as ensuring development without compromising the integrity of the environment. Their roles include (National Environment Act 1995):

1. advising the district environment committee on all matters relating to the environment;
2. serving as secretary to the district environment committee

DEOs should be involved in the EIA process of category A projects, in identifying and planning for mitigation measures for B projects and screening in the case of C projects. At district level, category B projects are the most common. These projects are under the jurisdiction of districts, for which the following principles of participatory planning should be taken into account (Ministry of Local Government 2003, p.2-3):

- (a) Consideration and incorporation of the results of the participatory planning process in the lower local councils that includes the marginalised categories.
- (b) Involvement of a wide range of stakeholders in the planning process including technical staff, elected leaders, NGOs/CBOs, the private sector etc.
- (c) Planning should promote mutual accountability between the members of the public, elected and appointed officers.
- (d) The plans must be realistic in terms of addressing the identified LG challenges and in light of the existing resources (human, time, material and financial).
- (e) The planning process should not be a one off exercise but rather continuous hence the concept of the “three –year rolling” development plans.
- (f) The planning process should be holistic incorporating all sectors and plans of NGOs/ CBOs in the LLG hence the concept of “integrated and comprehensive” development plans.
- (g) The planning process and cycle at LLG level should be in harmony with planning processes and activities at HLG level (including municipalities).
- (h) The planning process should build more on the vision, strength and opportunities than needs to address the LGs obstacles and challenges.

3.1 Planning guidelines

For effective environmental planning and projects implementation, the Ministry of Local Government developed the Local Government Management Service Delivery (LGMSD) Programme Operational Manual in 2009. The manual guides DEOs in planning for mitigation measures of roads and ensuring their implementation.

According to the LGMSD manual (Ministry of Local Government 2009), DEOs are supposed to identify mitigation measures for implementation by contractors of development projects, and to estimate the cost of these measures. Through routine monitoring (see fig 2), DEOs are supposed to ensure that contractors have implemented mitigation measures. This should be done before contractors are paid. Accounting officers are supposed to approve payments on the basis of certificates, issued by DEOs, which confirm that contractors have implemented the mitigation measures. According to the procedure, certification of implementation of mitigation measures should be performed at each of the completed phases (Permanent secretary, Ministry of local government, personal communication to all accounting officers of districts and municipalities, March 2012). The budget for monitoring the progress of general road works is under the Department of Works and Technical Services and therefore not under direct control of the DEOs (Ministry of Local Government 2009).

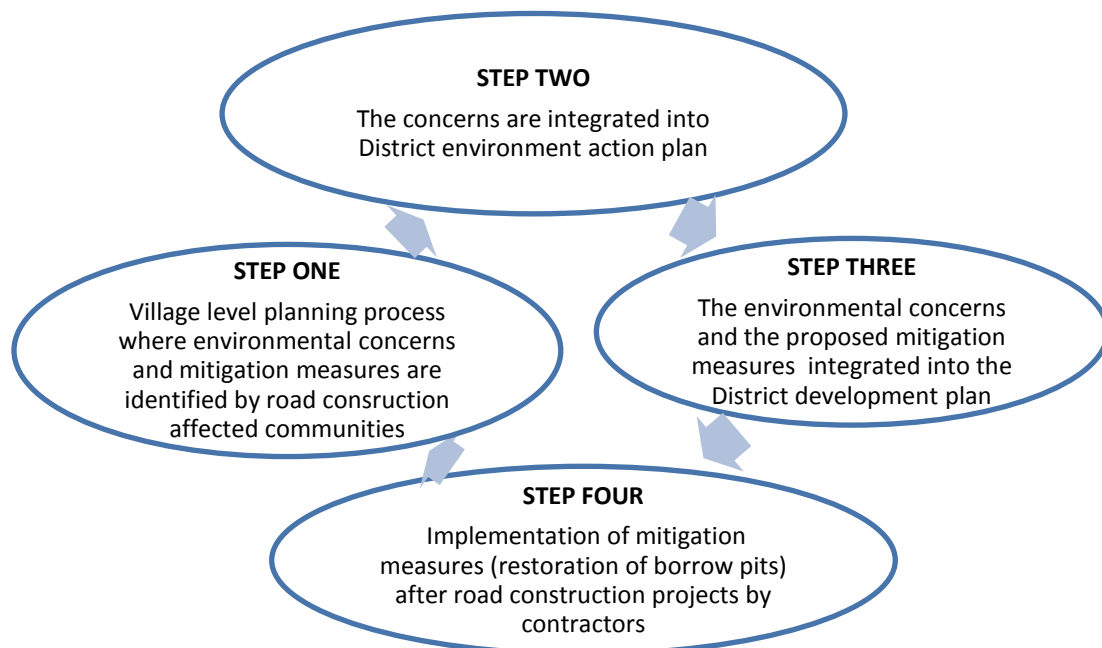


Fig 2. Planning cycle for category B road projects (adapted from Ministry of Local Government 2003).

To ascertain the level of DEO involvement in planning for, and implementation of, mitigation measures in road projects, the central government undertakes annual assessments. Depending on the performance of the DEOs (see Appendix II), their District is either rewarded or penalized (Tumushabe et al. 2011). When the DEO's performance is above the set minimum, a reward is attained through a 20% increment of their current grant from the central government. A score below the threshold in the same activities is tantamount to a 20% deduction from the current grant (Ministry of Local Government 2011). In ensuring

compliance to the requirements of planning for, and implementation of, mitigation measures, DEOs are supposed to work closely with other sectors or units that have core roles during planning and implementation phases. However, in the establishment for district local governments in Uganda, no formal channels exist between the DEOs and those sectors or units. According to Birungi (2008), this is challenging because environmental issues cut across many sectors and the environmental sector is therefore mandated to perform duties outside its department.

There are several development partners supporting road construction projects in Uganda. They include the governments of Japan and Germany which have environmental policies geared towards sustainable development. With environmental mainstreaming of development policies, infrastructural support to developing countries is based on the recipient countries' commitment to environmental compliance.

4. LITERATURE REVIEW

4.1 Participatory planning

The notion of participatory planning is grounded in the theory of public or citizen participation (Social Development Institute at Hohai University and AECOM International Development 2009). Participatory planning is about giving people who are affected by a given development a central role in the entire process. In doing so, they are expected to identify potential problems which are likely to affect them and propose solutions. It is a common decision making tool employed in many infrastructural projects nowadays.

According to Arnstein (1969 p. 217), citizen participation involves the “the redistribution of power that enables the have not citizens presently excluded from the political and economic processes to be deliberately included in the future.” Levels of participation vary. Manipulation and therapy are the lowest levels. They are followed by informing, consultation and placation, where people are allowed to express their views but have no influence on the outcome. However, in partnership, delegated power and citizen control, participants have real influence on the outcome of the process.

Participation in decision making enables the marginalised poor to have their rights recognised, claimed and taken into account (AccountAbility 2011). It also empowers the locals to engage and hold policy makers and implementers accountable for their actions. According to Carson and Gelber (2001) and Ministry of Local Government (2003), public participation is costly, time consuming, raises community expectations and is often characterised by disagreements between participants. These obstacles can be overcome by participants setting their own expectations within the available resources. Early dialogue among all stakeholders about activities to be undertaken prevents potential conflicts and adverse environmental consequences (Wetangula et al. 2008).

Public participation is manifested through stakeholder involvement. Stakeholders are people, organisations or institution directly or indirectly affected by, or with interest in, an issue (Grossi 2003). The fact that public participation involves a wide range of stakeholders calls for exhaustive stakeholder identification. As said by Renard (2004), omission of important stakeholders during the identification process might lead to undesired and unexpected outcomes.

Participation is influential if stakeholders are encouraged to become a part of the development initiative and is most useful in the earlier stages of the planning process (Geoghegan et al. 2004). It is vital to have all potential stakeholders invited to participate in the planning process. One efficient mobilisation technique is the use of an already established local institution in which the local people have trust. However, if the responsibilities of the institution in relation to the participatory process are not specified early, its own interests may override development initiatives.

Participatory planning is not an event, but a continuous process in which it is vital to take notice of variation in interests among the stakeholders. During implementation and operation however, the process is referred to as participatory monitoring (Social Development Institute at Hohai University and AECOM International Development 2009).

4.2 Road construction development

Several studies have shown a correlation between socio-economic development and road accessibility and connectivity to markets (Oraboune 2008; Umoren et al. 2009). According to Donnges et al. (2007), the contributions of roads are short lived if they are not maintained. As described earlier, road construction projects also pose negative impacts to communities. In this study the focus is on problems associated with unrestored borrow pits. Studies from Ghana and Kenya report similar problems with unrestored pits as described in the introduction (Musah 2009; African Development Fund 2010). Borrow pit restoration is thus an important part of road development as it prevents occurrences of these problems. Ensuring restoration generally involves working with a range of stakeholders and identifying common grounds that exist between them. It is important to design a strategy for public involvement in planning by identifying ways to build and maintain community interests in, and support for restoration (Howell et al. 2012). In the road sector, a community is defined as a homogeneous group that accrues benefits from a particular road or roads (Wattam 1998).

The so-called “green road approach” in Nepal illustrates the importance of community involvement in road construction development (Mulmi 2009). Initially the road construction plans aimed solely at boosting production and did not cater for environment issues in planning and implementation. The consequences were landslides, erosion and biodiversity loss. With decades of experience, Nepal’s engineers and planners realised that infrastructural development required a multi-disciplinary approach. Today, the “green road approach”, which caters for social, gender, economic, environmental considerations, is a tremendous success. In the first place, it minimised cutting of the slope, preserved vegetative cover and ensured proper waste management. Secondly, there was realisation of sustainable livelihoods via employment income, and locals who gained knowledge about road maintenance, which reduced operational costs. Community participation also enhanced sense of ownership, transparency, and accountability. Lastly, there was achievement of sustainable economy through optimal use of local resources, diversification through voluntary savings and various income generating ventures.

Public participation in construction of one of Bolivia’s roads provides another successful case (Liberman 2010). Community rapport was captured through the use of simple communication techniques with a targeted agenda such as job opportunities. Indigenous knowledge about the area was obtained and incorporated in the road design. Environmental impacts and their mitigation measures were suggested through dialogue. This built trust between communities

and road engineers which created opportunities for sustainability of the project. However, where the number of participants was too large, community participation was non-influential.

4.3 Road construction and borrow pit problems in Uganda

There are many documented cases of abandoned, unrestored borrow pits (see figure 3) and associated problems in connection with road developments in Uganda (e.g. Birabwa 2006; Aryaguka et al. 2007; African Development Fund 2009; Office of the Auditor General 2010; African Development Bank Group 2011; Uganda National Roads Authority 2011).



Fig 3. Abandoned borrow pit in Budongo sub-county, Masindi.

One study by Nyende et. al (2011) in Paliisa and Soroti Districts of Uganda discovered that some contractors prequalified by the local government lacked the genuine academic qualifications needed for qualification. This led to low quality construction work.

Under the Western Uganda road maintenance capacity building project, community participation was achieved through establishment of road committees (Leyland et al. 2001). Continuous participation of all stakeholders enabled engineers to gain local knowledge on accident black spots and drainage issues of the area. In turn, communities were able to learn about road design and maintenance which reduced operational costs. The road committees were also responsible for proising potential borrow areas and ensuring restoration of borrow pits.

When the environment sector was not involved at the beginning of the CAIP-1 and CAIP-2 road projects in Uganda, obstacles of encroaching ecologically sensitive areas were encountered during implementation (African Development Bank Group 2011). However, in

the subsequent programme CAIP-3, where the environment sector was involved from the beginning, no such problems are encountered.

5. SURVEY RESULTS

The views of Ugandan DEOs on borrow pit problems, obtained during the survey, are summarised in Table 1. All twelve DEOs who submitted answers acknowledged problems to communities connected to unrestored borrow pits. Mosquito breeding was the most frequently mentioned problem. Other significant impacts of un-restored borrow pits were road accidents, change in beauty of area and soil erosion. Spread of invasive plant species and conflicts between land owners, communities and contractors were the least common issues.

Table 1. Problems connected to unrestored borrow pits reported by District Environment Officers.

Problems with unrestored borrow pits	Number of respondents mentioning problem (n=12)
Breeding ground for mosquitoes (malaria vectors)	10
Road accidents	9
Loss of scenic beauty in the area	8
Soil erosion	5
Conflicts between land owners, communities and contractors	1
Spread of invasive plant species	1

A comparison between the reported levels of DEO involvement in planning for road construction with the levels of borrow pit restoration is presented in Table 2. To determine the extent of involvement, the following planning and implementation activities were considered: degree of involvement in incorporation of mitigation measures into project documents; preparation of bills of quantities, monitoring and certification for implementation of mitigation measures.

The term “high involvement” covers all responses with this core meaning. They include but are not limited to: “fully involved“, “to a great extent“ and “often involved“. “Low involvement” includes responses which are the opposite of high involvement, for instance: “minimal”, “not involved” and “low involvement“.

Five out of the seven DEOs highly involved in planning also showed high levels of restoration of borrow pits while all the five respondents with low involvement in the same activity showed low levels of borrow pit restoration.

All the seven DEOs highly involved in planning also reported high involvement in monitoring implementation of mitigation measures. However, only six of them certify implementation of mitigation measures. With two exceptions, (DEO “J” and “L”), DEOs who never monitor also do not certify implementation of mitigation measures.

Table 2. Levels of borrow pit restoration and District Environment Officers' (DEOs') involvement in road planning and implementation of mitigation measures.

Response category	Responses	District Environment Officers											
		A	B	C	D	E	F	G	H	I	J	K	L
Borrow pit restoration level	High level of borrow pit restoration	x	x	x	x	x							
	Low level of borrow pit restoration						x	x	x	x	x	x	x
Involvement in planning	High involvement in planning for roads	x	x	x	x	x	x	x					
	Low involvement in planning for roads								x	x	x	x	x
	<i>Involved in incorporation of mitigation measures into project documents</i>	x	x	x	x	x	x	x					
	<i>Highly involved preparations of bills of quantities</i>	x	x	x	x	x	x	x					
	<i>Involved in monitoring implementation of mitigation measures</i>	x	x	x	x	x	x	x					
	<i>Involved in certifying implementation of mitigation measures</i>	x	x	x	x	x		x			x		x
Rewarded DEOs	Rewarded for planning and implementation of mitigation measures	x	x	x	x	x	x	x	x	x	x	x	x

Six Districts whose DEOs' involvement in implementation of mitigation measures was low and who reported low restoration levels, still got rewarded for ensuring "high restoration levels". With the exception of DEO "C", whose extent of planning and restoration levels was high, the rest reported insufficient capacity to influence allocation of financial resources to address environmental mitigation measures in connection with road construction.

One DEO ("H") showed low involvement in all planning activities and reported low borrow pit restoration for roads funded under the LGMSD programme, which is the main funding agency of the roads under study. The same DEO, however, reported high involvement in planning for roads funded under CAIP in which high restoration of borrow pits was realised.

DEOs "H" and "K" mentioned that in some cases landowners chose to keep borrow pits open for purposes of collecting water for their livestock. Two other DEOs, "G" and "J", reported that landowners prefer to have abandoned borrow pits open because they attract other gravel buyers, while "F" and "G" said low restoration levels were due to insufficient budget to cater for monitoring. DEO "J" also attributed low restoration levels of borrow pits to deliberate failure by contractors to declare all borrow areas.

Five DEOs ("D", "H", "J", "K" and "L") reported that district engineers seldom invited them to take part in planning for activities of offsetting environmental impacts during road construction. Instead, engineers tended to carry out the tasks that DEOs should perform.

6. DISCUSSION

The results of the survey show that abandoned, unrestored borrow pits expose local communities to a range of problems, with mosquito breeding being the most prominent. These results strongly agree with what others have said about borrow pit problems in Uganda (e.g. Birabwa 2006; Aryaguka et al. 2007; African Development Fund 2009; African Development Bank Group 2011; Uganda National Roads Authority. 2011), as well as Ghana (Musah 2009) and Kenya (African Development Fund 2010).

The results indicate a correlation between the extent of DEO involvement in planning for road construction and the level of borrow pit restoration. All cases of low involvement in planning led to low restoration levels, while high involvement led to higher levels of restoration in most cases. There were, however, two examples of low restoration levels even when planning involvement scored high. This shows that high involvement in planning alone does not guarantee high restoration levels. The discrepancy in one of these cases, DEO “F”, suggests additional factors which could be responsible for high levels of restoration of borrow pits: All DEOs who stated high level of restoration took part in all planning and implementation activities. DEO “F” however, who participated in all activities except certifying implementation of mitigation measures, reported low levels of borrow pit restoration.

Another possible factor is at what project stage the certification of mitigation measures takes place. DEO “G”, who certified implementation of mitigation measures only at the final project stage, reported low levels of borrow pit restoration. This is in contrast to five other DEOs (“A”, “B”, “C”, “D” and “E”) who certified each of the completed phases separately up to the final stage. Certification at each stage seems to ensure remedy of environmental concerns in earlier phases before proceeding to the next level. Two other contrasting cases are DEOs “J” and “L” who certified implementation of mitigation measures without monitoring the implementation. By certifying implementation of mitigation measures without monitoring, the two DEOs acted contrary to the LGMSD manual (Ministry of Local Government 2009). It is difficult to confirm their reported low levels of restoration since they did no monitoring.

DEO “H” realised high restoration levels with high involvement in planning under the CAIIP-3 programme, where the budget for monitoring implementation of mitigation measures is under DEO control, but reported low restoration and minimal involvement in projects under the LGMSD programme where the budget for monitoring is not under the DEOs control. This not only supports the argument that DEO involvement in planning is a key factor in borrow pit restoration but also indicates that funding arrangements for monitoring implementation of mitigation measures affect the levels of borrow pit restoration. It seems important that DEOs have direct control over the budget. This is supported by the statements of DEOs “F” and “G” who attributed low restoration levels to a restricted monitoring budget which in addition is beyond their control. The insufficient capacity to influence financial resource allocation to the environment sector, mentioned by most DEOs, directly affects the level of restoration of borrow pits.

Most Districts, whose DEOs took part in the survey, were rewarded irrespective of their level of planning and implementation of mitigation measures. The fact that no distinction was made between DEOs with low and high restoration levels in terms of score is contrary to the assessment guidelines in the Local Government Assessment Manual (Ministry of Local Government 2011). According to the assessment manual, only the five Districts whose DEOs reported high restoration should have been eligible for the reward while all Districts where

DEOs reported low restoration levels of borrow pits and low involvement in planning should have been penalised. In this study, only one District (DEO “L”) with low planning and restoration levels had a penalty as expected. DEO “L” responds to the assessment team “honestly without hiding anything”. This suggests that DEOs of Districts with the same extent of planning and restoration levels as DEO “L” tend to put focus on the incentive of increased funding rather than involvement in planning and restoration of borrow pits. If that is the case it indicates that the reward system does not have the intended effect.

The National Environment Act (1995) mandates developers of road projects to carry out EIA and borrow pit restoration is a condition for EIA approval. In practice however, restoration is not commonly done in Uganda according to the Uganda National Roads Authority (2011). At the local level, several Districts in Uganda, such as Masindi, have local legislations which mandate contractors to restore borrow pits. Failure to enforce these laws is an indicator of the challenges in policy implementation in Uganda. District local government contractors should be pre-qualified according to their level of technical knowhow. However, as Nyende et al. (2010) point out, some Ugandan road contractors who lack these minimum requirements have been involved in forgery of academic qualifications to enable them to compete for these profitable contracts. This has resulted in low quality work. It is possible to speculate on the effects it has on borrow pit restoration levels.

According to five DEOs (“D”, “H”, “J”, “K” and “L”), district engineers often take over the duties of DEOs during planning for and implementation of mitigation measures for road construction instead of inviting them to participate in these activities. Uganda National Roads Authority (2011) observed the same tendency during the widening of the northern bypass in Kampala. In the same report it was said that borrow pit restoration is a rare practice in Uganda. This, and the low restoration levels reported by DEO “H”, “J”, “K” and “L”, suggests that the level of restoration obtained under engineer supervision might be inadequate. Their actions also contrast with the LGMSD programme guidelines (cf. Ministry of Local Government 2009).

Additionally, two DEOs (“G” and “J”) reported that land owners hinder restoration efforts of contractors because open borrow pits attract other buyers of gravel material more easily than intact land. In the environmental and social impact assessment report for the northern bypass (Uganda National Roads Authority 2011), the use of existing, open and abandoned sites was encouraged rather than excavating new areas. This recommendation appears to consider abandoning open borrow pits a normal practice which contrasts with the LGMSD guidelines (Ministry of Local Government 2009) and National Environment Act (1995).

A comparison between the planning framework of Uganda (Ministry of Local Government 2009) and literature on participatory planning shows that the planning framework and guidelines are rooted in the principles of participatory planning as they are described in the HPPGLL planning guide (Ministry of Local Government 2003). Participatory planning takes into account that the affected communities have a right to participate in diagnosing their own problems. It is a bottom-up planning process which is effected by engaging communities who identify their own interests and concerns, e.g. pertaining to road development projects. It is expected that this kind of planning would lead to the achievement of the desired results as identified by the involved stakeholders, e.g. restoration of borrow pits. Also to collective responsibility, transparency during implementation and accountability to the project affected communities. The results of the survey as well as examples from the literature review (Leyland et al 2001; Mulmi 2009; Liberman 2010; African Development Bank Group 2011)

show that this holds true, at least to a certain extent, when the planning framework and guidelines are adhered to. However, the survey results and the literature review (African Development Bank Group 2011; Uganda National Roads Authority 2011) also indicate that in many cases of road development, the planning framework is not properly followed. The DEOs, who are supposed to ensure that environmental and community concerns are attended to during road construction, are not adequately involved in the planning and mitigation processes. In such cases, restoration of borrow pits is less likely to occur, which exposes communities to malaria and other problems associated with open borrow pits.

6.1 Conclusions

This study revealed that the Ugandan planning framework and LGMSD guidelines are in line with the principles of participatory planning. When the planning guidelines are followed environmental and community concerns are addressed, but unfortunately that is often not the case. High participation of DEOs in planning for road development projects and implementation of mitigation measures was shown to be critical in order to achieve successful restoration of borrow pits. The study also revealed other complementing factors responsible for the extent of restoration:

Monitoring the progress of implementation of mitigation measures and certification at all phases of project progress is important because it obliges contractors to comply before they can be advanced funds for the subsequent stages.

A separate budget under the control of DEOs to cater for monitoring implementation of mitigation measures seems to be more effective in ensuring high restoration levels than a monitoring budget controlled by another sector.

The current reward system is inadequate in assuring incorporation of environmental and community concerns into planning and implementation of road construction projects.

6.2 Recommendations

DEOs should be involved in all phases of planning as provided for in the LGMD operational manual. Other sectors should not perform the tasks of the DEOs in the planning process.

Districts could identify and draw lessons from projects where restoration levels are high and the environment sector has been successfully involved.

The assessment process (see Appendix II) should be revised and made more effective.

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- (i) Last 3 years?
- (ii) Forthcoming assessment?

13. (a) To what extent are borrow pits restored in your District?

(b) In your opinion, what are the reasons for this level of restoration?

(c) Are you aware of any problems associated with borrow pits?

(d) If so, what are they?

14. Based on your experience in planning and implementation, do you have suggestions pertaining DEOs involvement?

15. Any other comment(s)?

Thank you for your time

APPENDIX II. Assessment of the involvement of DEOs in planning and implementation of mitigation measures (Source: Assessment manual for minimum conditions and performance measures 2011)

Performance Measures	Indicators of performance Measures	Information source, Assessment and scoring procedure
<p>Max possible score is 10</p> <p>Score at least 7 marks for reward</p> <p>Score at least 5 to remain static</p> <p>Any score below 5 deserves a penalty</p>	1. District development plan reflects sound analysis of environmental opportunities and constraints	1. Obtain and review district development plan. If there is evidence of integration of district environment action plan, score 1 or else 0
	2. Evidence of environmental submission to TPC/DEC	2. Obtain and review minutes of the relevant TPC/DEC, If there is evidence of the submission and review score 1 or else 0
	3. District Environment Officer participates in the development of the district development plan	3. Obtain and review minutes of planning meetings, if there is evidence of environmental submission from DEO score 1 or else 0
	4. Annual budget releases reflect allocations to address environmental issues raised in district plans	4. Obtain and review annual budgets and releases. If it reflects budgetary allocations and releases to address environmental issues that were raised in the DDP, score 1 or else 0
	5. Evidence that environmental screening or EIAs where appropriate were carried out for activities, projects and plans and mitigation measures are planned and budgeted for.	5. From the DEO, obtain and review screening forms or EIA reports for activities or projects in the DDP. Also review the annual budget and releases to identify allocation and releases to implement mitigation measures. If the screening forms were filled for projects in the DDP and mitigation measures budgeted for score 1 or else 0
	6. Evidence that mitigation measures are being implemented	6. From DEO obtain and review audit reports. From Environment, Production, Planning and Works obtain supervision review the M & E reports for evidence of implementation of mitigation measures. The assessment team to visit one site to ascertain implementation. Score 1 or else 0
	7. Evidence that environmental mitigation measures are incorporated into project documents	7. Study five documents from water, production and works to ascertain if mitigation measures have been costed.
	8. Capacity enhancement strategies for District Environment committee and District Technical planning committee	8. Obtain capacity building plans, local government structure plans and training reports for previous year. If there is evidence for 8 & 9, score 1 or else 0.
	9. Environmental awareness planned for and undertaken the previous financial year	