# FLOW OF FUNDS FOR SUSTAINABLE ROAD MAINTENANCE IN KENYA

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**ABSTRACT**

*Kenya established the Road Maintenance Levy Fund in 1993 to finance road maintenance. The Kenya Roads Board is at the centre of the Fund's administration and accomplishes this by working in collaboration with various implementing agencies. However, through professional experience, we have learnt that the flow of funds to road agencies is inconsistent, due to various factors, which this study aimed at documenting to justify reforms towards sustainable road maintenance. We applied the cross-sectional survey design to source information from 146 key informants. The study found that delay in allocation committee meetings (33.0%) and requisition of the Authority to Incur Expenditure (71.3%); lengthy disbursement channel (84.0%), lack of a proper tracking system (47.9%) delay in external auditing (56.4%) and weak financial management system (24.5%) were the key factors constraining the flow of funds. The constraints affected the implementation of work plans (73.4%), maintenance backlog (60.6%) and encouraged procurement malpractices (57.4%), among other issues. The study recommends the need for electronic fund transfer to agency accounts, follow-up communication to track disbursements; enforcement of adherence to provisions of the Public Officer Ethics Act and the Public Procurement and Disposal Act, commercial accounting practices at the agency level and additional audit staff.*

**JEL:** O16

**KEYWORDS:** Road Maintenance Levy Fund, Kenya Roads Board, Road Maintenance Agency, Sustainable Road Maintenance, Disbursement of Funds, Procurement Gaps and Accountability

## INTRODUCTION

Road transport plays in important role in the development of the Kenyan economy. It accounts for over 80% of land freight and passenger traffic in Kenya (Kenya Institute of Public Policy Research and Analysis [KIPPRA], 2001; World Bank, 2011; Government of Kenya [GoK], 2012). An efficient road infrastructure is a prerequisite for socio-economic development, particularly in agricultural economies. In this regard, a well-developed road network is necessary to facilitate the transportation and marketing of farm produce (Heggie, 1995; Nyangaga, 2007).

As noted by the Central Bank of Nigeria (2003), bad roads impede the movement of commodities and services from producers to consumers and farm produce from rural areas to urban centres. Bad roads also lead to loss of person-hours, with far-reaching consequences on motor vehicle maintenance costs, as well as the emotional and physical health of citizens. Similarly, Nyangaga (2007) points out that a poor road network increases the cost of farm inputs, production and access to markets, which in turn, makes the cost of living unbearable for low income-earners. Bad roads also constrain access to essential services such as healthcare, education and emergency responses in the event of disasters (GoK, 2012).

The development of a road network cannot be complete without a sound and sustainable program for its maintenance. In Kenya, the Road Maintenance Levy Fund (RMLF) came into existence in 1993 through an Act of Parliament and its objective was to facilitate the maintenance of public roads. The Kenya Roads Board (KRB), which came into existence through the Kenya Roads Board Act No. 7 of 1999, administers and manages the disbursement of RMLF resources. In this regard, KRB oversees and coordinates the development and maintenance of the road network in the country (GoK, 2006; Kenya Anti-Corruption Commission [KACC], 2007).

To achieve this, KRB has works in collaboration with various agencies and sub-agencies to carry out the actual maintenance of roads (Nyangaga, 2007; Government of Kenya, 2012). At the time of this study, the agencies included the Roads Department at the Ministry of Roads and Public Works (MoRPW), District Roads Committees (DRCs), Kenya Wildlife Service (KWS) and local government authorities across the country. Whereas the Department of Roads deals with international and national highways as well as trunk roads (Classes A, B and C, respectively), DRCs deal rural access and feeder roads (Classes D and E), while KWS focuses on the construction and maintenance of the roads in national parks and game reserves (GoK, 2006; KACC, 2007).

The Kenya Revenue Authority (KRA) is the Government agency mandated to collect revenues and remit the same to KRB accounts periodically. Upon receipt of the funds, a special committee at KRB headquarters sits and deliberates on allocation to various agencies across the country. A formula that is outlined in the Kenya Roads Board Act guides the exercise, in which case, 57% goes to the Department of Roads; 24% goes to DRCs, local authorities and KWS; 16% goes to constituencies through DRCs and 3% goes towards overhead costs at KRB headquarters (KACC, 2007; GoK, 2012).

Once allocations are complete, KRB forwards the minutes and instructions from the Permanent Secretary, MoRPW to the Chief Engineer (Roads) to support the requisition of Authority to Incur Expenditure (AIE) from the Chief Finance Officer in the same Ministry. The finance officer then prepares and forwards AIEs to the Principal Accounts Controller for commitment and feeding into the Integrated Finance Management Information System (IFMIS). Besides, KRB disburses funds to various agencies through a cheque, which goes to district treasury accounts, from where each agency receives new cheques as per AIEs (KACC, 2007).

Nevertheless, our engagements with road agencies in Nyanza and Western Provinces of Kenya revealed that the system was not efficient. Quite outstanding among the challenges was the inconsistency in the flow of funds from KRB to road agencies, due to bureaucratic bottlenecks and financial misappropriation at various levels of the disbursement channel.

In some instances, the agencies received funds as late as a few weeks to the end of the Government fiscal year, when they should compile and file their annual reports, as well as return unused funds to the treasury. These circumstances affected the implementation of action plans, leading to an increasing maintenance backlog. In view of this, about 47% of the road network in Kenya is in poor condition, a situation that the Kenya Poverty Reduction Strategy Paper 2001-2007 attributes to, among other issues, lack of routine maintenance (GoK, 2001; KACC, 2007).

A review of pertinent literature reveals that most developing countries established road funds between 1990 and 1999, as part of their quest for a sustainable funding mechanism for road maintenance. Furthermore, the review noted that the disbursement of road funds was done following three main methods – the first method is where funds are disbursed directly to agencies; the second method involves direct payment of contractors and suppliers upon certification of the work done; while the third method is the disbursement of funds to road agencies within a decentralized framework on the condition of accountability, which is followed by technical and financial audits at the end of fiscal year to facilitate subsequent disbursements (Heggie, 1995; 1999; Kumar, 2002). We have explored details of these methods under the literature review section of this paper.

The efficiency of road funds varies significantly across countries, depending on the disbursement method used, scope of road network covered and programmatic design. Various studies in a number of countries assessed the efficiency of road funds, including the disbursement methods. For instance, in Mozambique, de Richecour (1994) found that direct disbursement of funds to road agencies was successful in terms of sound procedures for controlling work. Consequently, the system was efficient in the utilization of public resources and eliminating maintenance backlog (de Richecour, 1994). However, the system is too demanding in terms of qualified and experienced personnel to supervise and oversee each project (Heggie, 1995).

In Ghana, Bahl (1992) and Heggie (1995) indicated that the second method of disbursements was associated with issues such as lack of stringent financial control measures and possible abuse by cartels within parent ministries. The third method of disbursement, which operates within a decentralized system of road maintenance, associates with shortcomings such as bureaucratic inefficiencies and financial misappropriation, as found in Tanzania and Zambia (Heggie, 1995; 1999; Kumar, 2002).

In Kenya, the review revealed a paucity of systematic academic investigations on issues arising from the method, which KRB adopted to disburse funds to road agencies. In view of this gap, the purpose of this study was to identify key lessons that may justify necessary reforms to improve the flow of funds from KRB to the agencies for sustainable road maintenance. We conducted the study in Kisumu, Siaya, Nyando, Kisii and Migori Districts in Nyanza Province of Kenya. The remainder of this paper covers sections on literature review, data and methodology used in the study, results and discussions as well as conclusions.

## LITERATURE REVIEW

There is no doubt that road transport plays an important role in the development of the global economy. For this reason, the development, rehabilitation and maintenance of the road network is highly prioritized in terms of policy, legal frameworks and funding. Consequently, all countries are increasingly investing substantial resources in the roads sub-sector to improve road network, thereby, enhance user comfort and safety; as well as reduce production costs and commodity prices (Heggie, 1995).

Being a capital-intensive initiative, the growth in human population and expansion of budgetary allocation to the social sector have seen the funds available for road development, rehabilitation and maintenance dwindle over the years. A growing budgetary deficit implies an increasing maintenance backlog, which may turn to be more costly in the long run (Zietlow & Bull, 2002). Although multilateral funding agencies, especially the World Bank, have supported the construction of roads in developing countries, addressing the recurrence of maintenance expenditure was a key challenge prior to the 1990s. The search for a more sustainable funding solution for road maintenance prompted the establishment of road funds, mainly financed through fuel levy, weighbridge toll collections as well as bridge and canal toll collections (Heggie, 1995).

Many developing countries established their road funds in the 1990s. For instance, the Ghana Road Fund came into existence in 1996 to finance routine maintenance and rehabilitation of public roads (Bahl, 1991). In Honduras, the Road Maintenance Fund came in 1993; while Costa Rica did so in 1998. In addition, Armenia passed the Roads Fund Legislation in 1998; Tanzania initiated the Road Fund in 1992 to finance urban and district roads; while Kenya established the Road Maintenance Levy Fund (RMLF) in 1993, just to mention a few (Zietlow & Bull, 2002; Kumar, 2002; Central Bank of Nigeria, 2003; Heggie, 1995).

The objectives of road funds include providing a regular flow of funds to support spending on road maintenance, keeping revenues apart from the government's consolidated account, and accounting for the use of funds. Whereas, some road funds only finance national or main roads, others focus on state, provincial and regional roads while others target urban road only. However, in most developing countries, road funds finance all expenditures for road maintenance, irrespective of scope of grade (Heggie, 1999).

The literature reveals that even though central boards manage road funds, they have to operate in collaboration with various agencies at the national, district and community levels. In Kenya, the central entity is the Kenya Roads Board (KRB), whose mandate is to oversee and coordinate the development and maintenance of the road network in the country (Nyangaga, 2007). KRB works in collaboration with various agencies, including the Roads Department in the MoRPW, DRCs, KWS and local authorities. Whereas the Department of Roads deals with Class A, B and C roads, including international highways, national highways and trunk roads, DRCs target Class D, E, and other roads, including rural access and feeder roads; while KWS focuses on the construction and maintenance of roads in national parks and game reserves (Nyangaga, 2007; GoK, 2012).

The central boards disburse funds periodically to the agencies to enable them carry out their maintenance work. The literature review reveals three distinctive procedures through which funds flow to road agencies. In this regard, the central board can either: disburse funds directly to road agencies, settle bills periodically after certification a contractor/supplier has completed the satisfactorily, or disburse funds on a conditional basis and undertake technical and financial audits *ex post* (Heggie, 1995; Kumar, 2002).

Under the first method, central boards disburse funds directly to road agencies, who should to account for expenditure within the usual government audit framework (Heggie, 1995; 1999). In this regard, the financial audit of disbursed funds simply checks to ensure that funds-in match funds-out. Under this arrangement, the agencies are not accountable to the road fund, but to their parent ministries. The latter ensures that road agencies spend funds on road maintenance and upholds quality workmanship (Moeller, 1993).

For instance, in Ghana, the Government splits road fund revenues at the source and pay directly into the accounts of the Ghana Highway Authority, the Departments of Feeder Roads and Urban Roads. Each agency has to demonstrate to the Ministry of Roads and Highways that it has used the resources efficiently. The central board thus plays no part in checking to ensure that funds produce value for money (Bahl, 1991; Heggie, 1995). Uganda is yet another country applying this method of disbursing funds to road agencies (KIPPRA, 2001). Although this procedure appears simple and devoid of bureaucratic inefficiencies, which may affect the flow of funds, it is deficient in terms of stringent financial management discipline. Consequently, it is subject to abuse by cartels within parent ministries (Heggie, 1995; Kumar, 2002).

Contrastingly, the second method provides opportunity for central boards to oversee the utilization of disbursed funds. In this regard, the central board disburses funds on a regular basis, but it only does so after certification that contractors/suppliers have completed work according to specification (Heggie, 1995; 1999). However, the effectiveness of this procedure depends on the availability of elaborate work programs, together with a system of technical and financial audit. Several countries, including Benin, India and Mozambique have applied the method to disburse funds to road agencies (Heggie, 1991; 1992).

On the same note, de Richecour (1994) notes that Mozambique is one of the countries with sound procedures for controlling work at the provincial and district levels. In this regard, the central board appoints an inspector for each road project to supervise the contractor, administer terms of contract and certify payments. Under this arrangement, contractors submit monthly statements of complete work, which inspectors certify for payment within fifteen days of presentation (de Richecour, 1994). Again, the success of this system depends on the sufficiency of qualified and experienced inspectors to oversee each project. Whereas the system remains one of the most efficient in Africa, it involves a great deal of field inspection; thus, may only be appropriate for major road projects (Heggie, 1995).

The third method for disbursing road funds is operates in a decentralized framework of road administration (Heggie, 1995; 1999). In this system, central boards allocate funds directly to each road agency, on a monthly, quarterly or biannual basis and then audits the use of such funds at the end of each financial year. Subsequent disbursements depend on the findings of audit reports; in this regard, where audit reports agree with agency disclosures, subsequent disbursement go as per schedule. However, discrepancies between audit reports and agency returns are a cause for delay, as central boards investigate and address elements of financial misappropriation. Consequently, the continuous flow of funding largely depends on how well the agencies use previous disbursements (Heggie, 1999).

In view of this, Kumar (2002) notes that Tanzania is one of the countries using this system to channel funds to urban and rural district councils (Kumar, 2002). In this regard, the central board channels funds through the Regional Development Director who audits road works to ensure that road agencies use funds efficiently to achieve quality workmanship (Kumar, 2002). Zambia is another African country applying the method to disburse funds to road agencies. The intention is to subject road works to thorough financial and technical audit and to use results to decide on matching grants for subsequent budgetary period (de Richecour, 1994).

Even though this method is appropriate for any number of road projects, it associates with various shortcomings, including bureaucratic inefficiencies and financial misappropriation by agencies, which contribute towards inconsistent flow of funds. This has significant negative consequences on the development and maintenance of public roads, in view of evidence from countries such as Tanzania, Zambia and Costa Rica (Heggie, 1995; 1999; Kumar, 2002; Zietlow & Bull, 2002).

## DATA AND METHODOLOGY

We applied the cross-sectional survey design, with both quantitative and qualitative approaches to source, process and analyze the requisite information. The study targeted key informants, which included staff at MoRPW, DRC members, contractors, suppliers, consultants and local authority staff. Inclusion in the sample depended on voluntary participation. We successfully interviewed all the 146 key informants, which we contacted. We collected primary data in May 2009 and the process involved identification of eligible participants, consenting and interviewing. We applied purposive sampling to select participants based on their incumbency at the time of the study. Identification and appointments with the targeted groups was facilitated was District Roads Engineers and District Public Works Officers.

We also applied a key informant interview guide with structured and semi-structured questions to source the data. In social sciences, the intensity of a social problem within an institutional setting is determinable through the perception of staff members. Frequent encounter with such problems inform and shape staff perceptions. In view of this, we gauged the seriousness of the challenges experienced by road agencies by requesting participants to rate their perceptions on a three-point scale of ‘not serious’, ‘serious’ or ‘very serious’. The intention was to source information that would facilitate prioritization of the challenges and justify the need for mitigative interventions.

Furthermore, we employed quantitative and qualitative techniques to process and analyze the data. In this regard, quantitative analysis that we obtained frequency distributions with percentages and cross-tabulation with Chi-square tests, we also transcribed, clustered into nodes and explored qualitative data for patterns and meaning to the flow of the funds. Detailed description of the design and approaches that we used in this study are available in following publications (Nachmias & Nachmias, 1996; Bryman & Cramer 1997; American Statistical Association, 1999; Owens, 2002; Rindfleisch, Malter, Ganesan & Moorman, 2008).

## RESULTS AND DISCUSSIONS

The study covered 146 key informants, which included 29 (19.9%) staff of the Ministry of Roads and Public Works (MoRPW), 6 (4.1%) engineer consultants, 22 (15.1%) members of District Roads Committees (DRCs), 10 (6.8%) contractors, 16 (11.0%) suppliers and 63 (43.2%) staff of local authorities. Among other findings, the results indicated that delay in allocation committee meetings, delay in requisition of the Authority to Incur Expenditure, lengthy disbursement channel and lack of a proper tracking system for disbursements were the key factors affecting the flow of funds to road agencies. Other factors included delay in external auditing of the financial accounts and weak financial management systems. We have presented and discussed details of these findings in the subsequent paragraphs in this order: flow of funds, factors affecting consistent flow of funds and the implications of inconsistent flow of funds.

We requested participants to indicate their opinion regarding the consistency of Road Maintenance Levy Fund (RMLF) disbursements over the preceding two years period based on their experiences. Even though 52 (35.6%) out of 146 participants affirmed that disbursements had been consistent over the reference period, more than two-thirds [94 (64.4%)] hinted a contrary opinion regarding the consistency of disbursements. This finding suggests that funding inconsistency was a critical challenge among a significant proportion of road agencies. Across the districts, disbursements were likely to be more consistent in Kisumu and Kisii, than in Migori and Siaya Districts. Table 1 shows that in Kisumu District, up to 13(50.0%) participants were of the view that disbursements were consistent.

Table 1: Perceived Consistency of Disbursements across the Districts

| District | Consistent | | Inconsistent | | n |
|---|---|---|---|---|---|
| | *Frequency* | *Percent* | *Frequency* | *Percent* | |
| Migori | 7 | 24.1 | 22 | 75.9 | 29 |
| Kisumu | 13 | 50.0 | 13 | 50.0 | 26 |
| Nyando | 9 | 33.3 | 18 | 66.7 | 27 |
| Siaya | 8 | 22.9 | 27 | 77.1 | 35 |
| Kisii | 15 | 51.7 | 14 | 48.3 | 29 |
| **Overall** | **52** | **35.6** | **94** | **64.4** | **146** |

*This Table shows the perceptions of key informants regarding the consistency of Road Maintenance Levy Fund disbursements across the five districts. Overall, a higher proportion (64.4%) believed that disbursements were not consistent, suggesting that the challenge was experienced by a significant proportion of agencies. Across the districts, Kisii had the highest proportion (51.7%) affirming that disbursements were consistent, followed by Kisumu (50.0%). Contrastingly, in Siaya and Migori Districts, only 22.9% and 24.1%, respectively, affirmed that disbursements were consistent.*

In Kisii District, 15 (51.7%) participants were of the view that disbursements were consistent. However, in Siaya and Migori Districts, only 8 (22.9%) and 7 (24.1%) affirmed that disbursements were consistent. Based on this, the analysis obtained a computed $\chi^2$ value of 15.606, 4 degrees of freedom and a p-value of 0.035, which was significant at 0.05 error margin. This suggests up to 95% chance that districts were not homogenous in terms of the consistency of disbursements, as some districts appeared to be more favored than others were. Participants linked the inconsistency of disbursements with an array of factors at various levels of the disbursement channel.

The results presented in Table 2 show that 79 (84.0%) out of 94 participants cited the lengthy disbursement system as a key factor constraining the consistency of disbursements. Regarding the extent of seriousness, 47 (59.5%) out of 79 participants indicated that lengthy disbursement system was a serious constraint, while 29 (36.7%) participants described the challenge as very serious. On aggregate, up to 96.2% rated the constraint as serious, at least at the very minimum.

In this regard, participants pointed out that KRB disburses funds to the districts through cheques upon receiving such from Kenya Revenue Authority (KRA), the collection agency. The District Treasury, which coordinates all public funds at the district level, receives disbursements and issues new cheques to various agencies as per the Authority to Incur Expenditure (AIE) from the Chief Finance Officers at the MoRPW headquarters. The study found that funds could stay at the District Treasury for as long as it took the Chief Finance Officer to prepare and remit the AIEs.

Table 2 further shows that lack of a proper tracking system for disbursements was another factor affecting the consistency of funding flow, as indicated by 45 (47.9%). Besides, out of 45 participants, 23 (51.1%) described lack of a proper tracking system for disbursements as a serious constraint, while 14 (31.1%) rated it as 'very serious'. Based on this, participants said that some agencies did not receive their disbursements in time due to lack of follow-up communication from KRB headquarters. Quite often, agencies were not aware of the goings-on at KRB headquarters regarding the time of disbursements and the time when agencies were to receive their cheques from the district treasury. Without follow-up or alerting communication agencies, funds could lodge at the district treasury for longer than necessary, even when the MoRPW issued AIEs in good time.

In relation to lack of a proper follow-up system, participants cited cases where senior public officials at the district level diverted funds to private investments to earn profits. In an instance, a staff of an agency colluded with senior public officials at the district treasury, opened a bank account using the agency name, cashed the cheque and drained funds to a private account, without the knowledge of agency authorities. At the time when the authorities discovered the incident, the suspect had already resigned and relocated to another country. Participants attributed such incidents to lack of regular communication from KRB to agencies, especially at the time of disbursements, as well as a week after disbursements to establish if the funds had reached intended recipients.

Table 2 further shows that 53 (56.4%) participants mentioned delay in external auditing of the agency financial accounts as an impediment to consistent flow of funds. Besides, 36 (67.9%) out of 53 participants rated the challenge as serious, while 7 (13.2%) believed that the challenge was very serious. Participants indicated that the Auditor General's office was responsible for evaluating the utilization of road funds at the agency level. External auditors submitted their reports to KRB to support decisions regarding subsequent disbursements, the guiding criterion being lack of financial irregularities. Consequently, delay in external auditing or delays in the transmission of resultant reports to KRB, affected the timeliness of subsequent disbursements. Participants attributed delay in external auditing to understaffing at the Auditor General's office.

Furthermore, Table 2 indicates that weak financial management system at the agency level was a key factor affecting the consistency of disbursements. This was stated by 23 (24.5%) out of 94 participants. Besides, up to 13 (56.5%) were of the view that the challenge was 'serious', while 9 (39.1%) said the challenge was very serious. Improving the financial management systems at the agency level by providing new or upgrading existing information and communication technology (ICT) facilities and programs would be an important step towards improving funding consistency. Nonetheless, participants pointed out that even though external auditing processes repeatedly documented issues related to the appropriateness of financial management systems at the agency level, the Government was yet to address the issues to improve the management of road funds.

Table 2: Challenges to Funding Flow and Perceived Seriousness

| Constraints to funding flow | Perceptions | Frequency | Percent |
|---|---|---|---|
| Lengthy disbursement system | Yes | 79 | 84.0 |
| | No | 15 | 16.0 |
| | **Total** | **94** | **100.0** |
| | Not serious | 3 | 3.8 |
| | Serious | 47 | 59.5 |
| | Very serious | 29 | 36.7 |
| | **Total** | **79.0** | **100.0** |
| Lack of tracking system for disbursed funds | Yes | 45 | 47.9 |
| | No | 49 | 52.1 |
| | **Total** | **94** | **100.0** |
| | Not serious | 8 | 17.8 |
| | Serious | 23 | 51.1 |
| | Very serious | 14 | 31.1 |
| | **Total** | **45** | **100.0** |
| Delays in external auditing of agency accounts | Yes | 53 | 56.4 |
| | No | 41 | 43.6 |
| | **Total** | **94** | **100.0** |
| | Not serious | 10 | 18.9 |
| | Serious | 36 | 67.9 |
| | Very serious | 7 | 13.2 |
| | **Total** | **53** | **100.0** |
| Inconsistency between annual returns and audit requirements | Yes | 23 | 24.5 |
| | No | 71 | 75.5 |
| | **Total** | **94** | **100.0** |
| | Not serious | 1 | 4.3 |
| | Serious | 13 | 56.5 |
| | Very serious | 9 | 39.1 |
| | **Total** | **23** | **100.0** |
| Irregular meetings of the allocation committee | Yes | 31 | 33.0 |
| | No | 63 | 67.0 |
| | **Total** | **94** | **100.0** |
| | Not serious | 10 | 32.3 |
| | Serious | 13 | 41.9 |
| | Very serious | 8 | 25.8 |
| | **Total** | **31** | **100.0** |
| Delay in requisition of Authority to Incur Expenditure (AIE) by Kenya Roads Board | Yes | 67 | 71.3 |
| | No | 27 | 28.7 |
| | **Total** | **94** | **100.0** |
| | Not serious | 12 | 17.9 |
| | Serious | 33 | 49.3 |
| | Very serious | 22 | 32.8 |
| | **Total** | **67** | **100.0** |

*This Table indicates the challenges to funding flow from Kenya Roads Board to road maintenance agencies and perceptions about the seriousness of each constraint. Notably, up to 84.0% identified the stages involved in the disbursement channel as a key factor affecting the consistent flow of funds, while 47.9% mentioned lack of a proper tracking system for disbursements. Up to 56.4% of the participants indicated that delay in external auditing was a key factor affecting the consistency of disbursements for road maintenance, while 24.5% cited weak financial management system as one of the constraints. Besides, up to 33.0% of the key informants stated delays in the allocation committee meetings, while 71.3% felt that delays in requisition of AIE was a key constraint to the flow of funds.*

Participants hinted that when KRA releases funds, an allocation committee at KRB convene to discuss and allocate funds as per agency work plans. However, the meetings were not consistent as pointed out by 31 (33.0%) participants. When asked to share opinion regarding the seriousness of the matter, Table 2 shows that 13 (41.9%) said it was ‘serious’, while 8 (25.8%) felt that it was ‘very serious’. Delays in the allocation committee meetings directly affected the consistency of funding, as KRB could not disburse funds before approval by the allocation committee. Participants indicated that the composition of the committee included the public and private sectors, which contributed towards the difficulty of raising quorums for meetings. Even the committee had a fixed schedule of meetings, the delay was noted particularly when members are required for special sessions to discuss and allocate funds for agencies whose accounts are reconciled and reinstated.

Furthermore, Table 2 indicates that 67 (71.3%) participants identified delays in the requisition of AIE as one of the constraints to consistent funding. Regarding the seriousness of the challenge, up to 33 (49.3%) participants described the constraint as ‘serious’, while 22 (32.8%) felt that it was ‘very serious’. Participants indicated that once the committee has allocated funds, KRB used the minutes and other documentation to support requisition for AIE from the Chief Finance Officer at the Ministry of Roads and Public Works (MoRPW). In this regard, participants cited delays of up to two months in before AIE arrives at the District Treasury.

The study also found that inconsistent disbursement of funds affected the activities of road agencies in various ways. Table 3 shows that out of 94 participants who indicated that disbursements were inconsistent, 69 (73.4%) mentioned delay in work plan implementation as the main challenge resulting from inconsistent flow of funding. Each fiscal year, road agencies develop and submit work plans to KRB for funding consideration. Inconsistent disbursements affected the implementation of such work plans, forcing the agencies to carry forward unimplemented work to subsequent financial years. However, participants pointed out that reconciling overflowing work with new maintenance projects was a key challenge in the implementation of subsequent work plans.

Again Table 3 indicates that 57 (60.6%) cited procurement malpractices as a key challenge arising from inconsistent flow of funds. Participants indicated that in some instances, they received funds very late towards the end of financial year, when they were supposed to compile and file their financial reports. To avoid audit queries arising due to unspent funds, some agencies embarked on rushed expenditure to exhaust their allocation. This culminated in irregularities such as emergency procurement and single sourcing of contractors and suppliers. Emergency procurement conveniently avoided the necessary procedures for selecting contractors and suppliers based on time constraints. Even though emergency procurement does have economic sense under such circumstances, some agencies or their senior staff took advantage of the situations to award tenders to contractors with inadequate capacity, resulting to poor workmanship and wastage of public resources.

Table 3: Challenges Resulting from Inconsistent Funding Flow

| Valid responses | Frequency | Percent of responses | Percent of cases |
|---|---|---|---|
| Delay in work plan implementation | 69 | 26.7 | 73.4 |
| Maintenance backlog | 54 | 20.9 | 57.4 |
| Procurement malpractices | 57 | 22.1 | 60.6 |
| Poor workmanship | 30 | 11.6 | 31.9 |
| Cancellation of contracts | 21 | 8.1 | 22.3 |
| High cost of repair | 27 | 10.5 | 28.7 |
| **Total** | **258** | **100.0** | **274.5** |

*This Table presents the challenges resulting from inconsistent disbursement of the Road Maintenance Levy Fund at the agency level. The first column from left indicates valid responses. We computed the proportions in the last column as a ratio of the frequency distribution in column two and the sample size of key informants reporting that funding flow was inconsistent (n=94). The main challenges resulting from inconsistent funding flow included delay in work plan implementation (73.4%), maintenance backlog (60.6%) and procurement malpractices (57.4%).*

Emergency procurement also provided opportunity for nepotism and favoritism in tender awards, which in most cases, resulted to poor workmanship [30 (31.9%)] and loss of public resources. In this regard, participants alluded to the possibility of some senior officers along the disbursement channel, deliberately delaying the release of funds to agencies, with the intention of creating situations that would favor emergency procurement and single sourcing of particular contractors and suppliers. In such cases, selected tenderers are people with business or family ties with senior public officials directly or indirectly involved with the road fund, which is contrary to provisions of the Public Procurement and Disposal Act, 2005.

Moreover, participants noted that due to lack of a proper tracking system, the funds laying at District Treasury accounts were at risk of diversion to private investments by senior public officials. During emergency procurement, some agencies split orders to defeat the threshold (KShs. 5,000,000) for open tendering, according to the procurement regulations. In this regard, the agencies split orders into small units of less than the legal threshold. This practice provided opportunity for financial misappropriations. Participants also linked procurement malpractices to overpricing of materials and works, because of collusion between some public officials and providers.

As indicated in Table 3, up to 54 (57.4%) participants indicated that inconsistent funding flow resulted to a backlog of maintenance works. This logically arises from the fact that some agencies implemented work plans half-way, while in other situations, some agencies failed to implement work plans altogether. In relation to this, participants indicated that backlogs complicated the prioritization of the roads for maintenance works when funds became available. Backlogs also resulted to further deterioration of the road network, resulting to a higher cost of repair, as reported by 27 (28.7%) participants. In relation to this, participants indicated that at the time when funds became available, the cost of repair had overshot the budget included in work plans.

Under such circumstances, incomplete sections of the road network often raised serious audit queries, thereby, putting agency staff under pressure and scrutiny. Again, harmonization of work plans for subsequent years to incorporate pending work from previous work plans was a key challenge for agencies. In some districts, excessive delays led to the cancellation of contracts between the agencies and tenderers, according to 21 (22.3%) participants. In a particular incident, tenderers sued an agency for breach of contract, resulting to heavy court fines.

## CONCLUSIONS

This aim of this study was to identify key lessons that may justify necessary reforms to improve the flow of funds from KRB to road agencies for sustainable road maintenance. The findings and conclusions of this study may also be relevant to other African countries; consequently, this article may also stimulate other developing countries to improve the operational efficiency of their road funds, within a decentralized framework.

The study found that disbursements were inconsistent for most road agencies (64.4%), which posed a challenge to many road agencies regarding road maintenance. Across the districts, disbursements were likely to be more consistent in Kisumu and Kisii, than in Migori and Siaya Districts. There is no doubt that the initiation of the road fund was a noble idea, aimed at providing a sustainable mechanism for road maintenance in developing countries, more particularly in the SSA countries. In Kenya, the disbursement of consistent flow of road fund is constrained by inefficiencies throughout the disbursement channel. This study revealed a few of the issues constraining the flow of funds to road agencies. However, this is by no means exhaustive of the challenges affecting disbursement consistency. At the national level, the consistent flow of funds is constrained by delays in allocation committee meetings (33.0%) and requisition of the Authority to Incur Expenditure (71.3%).

Even though the tracking of disbursements is largely a responsibility of the national oversight, authority (KRB), its effect on funding flow manifests more at the district level. In this regard, the lengthy disbursement channel (84.0%) and lack of a proper tracking system for disbursements (47.9%) were the issues impeding the flow of funds at the district level. At the agency level, delay in external auditing of the financial accounts (56.4%) and weak financial management system (24.5%) were the key issues

constraining the flow of funds. The constraints affected routine maintenance of roads in various ways, for instance, by delaying the implementation of work plans (73.4%), increasing maintenance backlog (60.6%) and encouraging procurement malpractices (57.4%), among other issues.
The distribution of the challenges along the disbursement channel necessitates a multi-tier approach in addressing the issues to enhance operational efficiency. Being a system that involves many stakeholders, the approach to addressing the issues should be multisectoral, including the fund oversight authority, line ministries and departments, anticorruption authority, procurement oversight authority, road agencies and the civil society. The forum should identify appropriate measures and implementation modalities.

In this era of technological advancement, disbursing funds from the national level to a road agency at the community level should not take more than four workdays. Taking the shortest duration possible to reach road agencies should be reduce the risk of diversion and ensure that work plans are implemented as scheduled and backlogs kept minimal. For this reason, enhancing efficiency in the transfer of funds to road agencies is a matter of priority to ensure consistency in the flow of funds. Consequently, the stakeholders should consider changing the mode of disbursement of funds from cheques to Electronic Funds Transfer directly to agency accounts. This is likely to avoid the possibility of deliberate delay at some stations, which may create a crisis to the benefit particular individuals. Again, depending on the magnitude of projects, KRB should adopt a mixed model of disbursing funds to include advance transfer to agency accounts for small projects or direct payment to tenderers upon completion and certification of work for bigger projects.

However, while still using the current disbursement channel, KRB should initiate a strong system for tracking the flow of disbursements. KRB may achieve this by alerting all agencies the moment funds are disbursed and making follow-up communication with the agencies and district treasury officials to ensure that funds reach the designated recipients in the shortest time possible. Equally important is the need to expedite requisition for AIEs. In this regard, appropriate supervisory measures should be in place to ensure the finance department prepare and release all AIEs to the districts within twelve days of requisition. This further calls for the upgrade and round-the-clock maintenance of the Integrated Financial Management System (IFMIS) to capture and guarantee AIEs within the shortest time possible.

The proposed measures target the KRB and the Ministry headquarters. The implementation of such measures very much depends on the will of the Permanent Secretary in the Ministry of Roads and Public Works. To enhance accountability, the auditing process should not target road agencies only; rather it should cover the operation efficiency at the national level to avoid unnecessary audit queries. A more comprehensive auditing report should track the operational procedures and efficiency right from the time of allocations to the time funds reach agency accounts. The auditing process should enhance efficiency and accountability at all levels of the system, much to the advantage of road maintenance projects.

The current disbursement system relies on the district treasury to coordinate the distribution of funds to various agencies working in a district. In this regard, efficiency at this level of the disbursement channel is critical for the success of the road fund. The Public Service Commission and the Kenya Anti-Corruption Commission should ensure that all public officials conduct themselves within the provisions of the Public Officer Ethics Act Cap 183 of 2003 to enhance discipline in handling public funds. Part V, sections 36, 37 and 39 of the Act outlines the procedures for dealing with public officers using their offices for personal enrichment.

The District Tender Committee, whose membership includes senior public officials and political leaders, coordinates procurement activities. The procurement of works and materials for road maintenance is a critical area that requires illumination to award road maintenance tenders to qualified contractors with adequate capacity. Although the law already exists – Public Procurement and Disposal Act of 2005, enforcement remains a key gap. The Public Procurement Oversight Authority and the Kenya Anti-

Corruption Commission should step up their roles by conducting procurement activities in accordance with the procedures.

The Government should upgrade the financial management systems at the agency level with new Information and Communication Technology (ICT) equipment and programs to improve the accuracy of financial statements. A stronger system of financial management is indispensible for budget control and informed management decisions. Consequently, the agencies should move towards regular commercial accounting practices, including standard income and expenditure statements as well as balance sheets. The income statements should specify amount received from KRB, proceeds from sale of contract documents and government grants.

As noted by Benmaamar (2006), financial accounting systems should present a clear picture of the road agency's overall financial health and be capable of producing the financial data needed to plan expenditures, compare alternative strategies, monitor implementation, and account for the way funds are used. Effective financial management should enhance managerial accountability, minimize chances of financial misappropriation and improve accuracy to avoid issues arising from the auditing process. In this regard, proper accounting systems are likely to improve the consistency of funding flow and enhance time management.

External auditing is also an important tool for strengthening managerial accountability. The Government's audit office is responsible for routine evaluation to ensure no agency exceeds work plan budgets and that all agencies handle the funds in accordance with Government expenditure guidelines and procedures. However, the timeliness of the exercise remains paramount to ensure that road agencies receive their allocations in time. Improving the staffing level at the Government's audit office is a key step towards ensuring timely auditing of agency accounts to facilitate subsequent disbursements.

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## BIOGRAPHY

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## REFERENCES

American Statistical Association (1999). *Survey Research Methods Section Information*.

Bahl, R. 1992. *The Administration of Road User Taxes in Developing Countries*. Working Paper Series 986. Washington DC: World Bank.

Benmaamar, M. (2006). *Financing of Road Maintenance in Sub-Saharan Africa: Reforms and Progress towards Second Generation Road Funds*. Discussion Paper No. 6. Washington DC: Sub-Saharan Africa Transport Policy Program.

Bryman, A. and Cramer, D. (1997). *Quantitative Data Analysis with SPSS for Windows: a guide for Social Scientists*. London: Routledge

Central Bank of Nigeria (2003). *Highway Maintenance in Nigeria: Lessons from Other Countries*. Research Department Occasional Paper No. 27). Abuja: Research Department.

de Richecour, A.B. (1994). *Review of African Road Funds: What Works and Why?* SSATP Working Paper 14. Washington DC: World Bank, Africa Technical Department.

Government of Kenya (2001). *Kenya Poverty Reduction Strategy Paper, 2002-2007*. Nairobi: Ministry of Planning and National Development.

Government of Kenya (2006). *Management of the Roads Sub-sector for Sustainable Economic Growth, Sessional Paper No. 5 of 2006.* Nairobi: Ministry of Roads and Public Works.

Government of Kenya (2012). *Policy on Aligning the Roads Sub-Sector with the Constitution*. Nairobi: Ministry of Roads and Public Works.

Heggie, I.G. (1991). *Designing Major Policy Reform: Lessons from the Transport Sector*. Discussion Paper 115. Washington DC: World Bank.

Heggie, I.G. (1992). *Selecting Appropriate Instruments for Charging Road Users.* Infrastructure and Urban Development Department Report 95. Washington DC: World Bank.

Heggie, I.G. (1995). *Management and Financing of Roads: an Agenda for Reform*. Technical Paper No. 275. Washington DC: World Bank.

Heggie, I.G. (1999). "Commercially Managed Road Funds: Managing Roads like A Business, Not Like a Bureaucracy." *Transportation Research*, Vol. 26, No. 1, pp. 87-111.

Kenya Anti-Corruption Commission (2007). *Examination Report into the Systems and Policies, Procedures and Practices of the Roads Sub-Sector*. Nairobi: Directorate of Preventive Services.

Kenya Public Policy Research and Analysis (2001). *Road Infrastructure Policies in Kenya: Historical Trends and Current Challenges*. KIPPRA Working Paper No. 1. Nairobi: Infrastructure and Economic Services Division.

Kumar, A. (2002). *A Review of Road Sector Reforms in Tanzania, Sub-Saharan Africa*. SSATP Discussion Paper, No. 2. Washington DC: World Bank.

Moeller, P. (1993). *Transport Reform and Institutional Development: Lessons from the Sub-Saharan Africa Transport Program.* Infrastructure Notes, Transport OT-3. Washington DC: World Bank, Transport, Water and Urban Development Department.

Nachmias, C.F and Nachmias, D. (1996). *Research Methods in the Social Sciences, 5th Edition*. London: Arnold.

Nyangaga, F. (2007). *International Seminar on Road Financing and Investment Road Fund Management: Best Practices*. Nairobi

Owens, K.L. (2002). *Introduction to Survey Research Design*. SRL Fall 2002 Seminar Series http://www.srl.uic.edu

Rindfleisch, A., Malter, A.J., Ganesan, S. and Moorman, C. (2008). "Cross-Sectional Versus Longitudinal Survey Research". *Journal of Marketing Research*, Vol. 45, No. 3, pp. 1-23.

World Bank (2011). *A Bumpy Ride to Prosperity Infrastructure for Shared Growth in Kenya*. Washington DC: Poverty Reduction and Economic Management Unit, Africa Region.

Zietlow, G. J. and Bull, A. (2002). *Reform of Financing and Management of Road maintenance. A New Generation of Road Funds in Latin America*.