



Promotion of Efficacy in the Regulation of Noise Pollution in Kenya through Devolution and Public Participation

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

This research article examines the promotion of efficacy in the regulation of noise pollution in Kenya through devolution and public participation. The prevention of noise pollution has been recognised as a component of a clean and healthy environment. In many countries, Kenya included, comparatively little attention is paid to noise pollution, despite its importance in the urban and industrial scene. For example, although the provisions of sections 115 and 175 of the Public Health Act and the Penal Code respectively, prohibit and criminalise public nuisance, their enforcement is outside the competence of the individual. Rarely does one hear of a court action by public health or other officers yet pollution continue to occur. It appears that there has been total apathy by the officers concerned with the enforcement and the community affected by the nuisance. Lack of efficacy in the implementation and enforcement of the Regulations is a major reason for the existence of noise pollution in Kenya. Among the challenges faced is the lack of resources in terms of logistics to create awareness with regards to the problems associated with noise pollution. The Kenyan public are yet to appreciate and understand that noise is an unnecessary evil in the society. As the level of noise pollution rises every day at an alarming rate a serious problem is looming to the

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members of the public and the country in terms of the health issues, communication troubles, general nuisance, and its corresponding effects on wildlife. There is a limited research field study and gaps in this area regarding noise pollution control and how to enhance its efficacy in Kenya. New strategies, beyond the simple command and control instruments currently in place at the national level, shall help in changing behaviours in ways that shall be beneficial to the society as a whole. This paper tends to look at how the various tiers of national and county governments have embraced these principles in the promotion of efficacy in the environmental governance in Kenya, especially in noise pollution control.

Keywords: Noise pollution; environment; public health; pollution control.

1. INTRODUCTION

Noise pollution can be defined as unwanted or offensive sounds that unreasonably intrude into our daily activities [1]. Noise has in recent years emerged as one of the important pollutants of environment, attracting attention from the local authorities and the international community around the world. Despite much having been written about the adversity of noise pollution, much of the information has not been appreciated by the medical community and the general public [2]. This has made noise pollution to become a fact of life worldwide.

The potential health effects of noise pollution are numerous and significant, both medically and socially. Excessive noise can cause injury to the body [3]. It interferes with sleep, concentration, communication and recreation [4]. Noise, even at levels that are not harmful to hearing are perceived subconsciously as a danger signal even during sleep [5]. The cumulative adverse effects of noise impairs health and degrade residential, social, working and learning environment with corresponding real (economic) and intangible (well-being) losses.

The aim of enlightened government control should be to protect citizens from the adverse effects of airborne pollution, including those produced by noise. This is because people have the right to choose the nature of their acoustical environment; it should not be imposed on them by others. In Kenya, noise pollution is currently regulated, mainly by the command and control instruments such as laws, regulations, permits, standards etc. Specifically, Kenya's regulation of noise pollution is in the form of laws and regulations such as *The Environmental Management and Coordination Act (Noise & Excessive Vibration pollution) (Control) Regulations* [6], (hereinafter referred to as the 'Regulations'); *The Factories and other Places of*

Work (Noise Prevention and Control) Rules, 2005 [7]; the Convention Concerning the Protection of Workers against Occupational Hazards in the Working Environment due to Air Pollution, Noise and Vibration, 1977 [8], and the provisions of Sections 55 and 58 of the Traffic Act [9]. These are national laws. The constitution of Kenya, 2010 at Schedule 4, Part 2 (3), made under articles 185 (2), 186(1) and 187(2), however, allocates the function of control of air pollution, noise pollution, and public nuisances and outdoor advertising on the devolved county governments [10].

Decentralised management of the environment and natural resources is, therefore, a new paradigm in Kenya's environmental management scene because for a long time, environmental management in Kenya has generally been undertaken by the national government on behalf of the people of Kenya. The command-and-control approach philosophy which has predominantly informed the development of Kenya's environmental regime, according to Ochieng, however, requires a centralised authority for environmental management in the hands of public institutions, with little, if any, delegation of responsibilities to other authorities or communities thereby permitting little room for public participation [11].

The Constitution of Kenya at Article 69(1)(d), however, encourages public participation in the management of the environment. It also provides for national values and principles of governance in Kenya which at Article 10(2)(a) includes devolution and public participation. Kenya's devolution, adopted following the March 2013 general elections, is expansive in scope and implementation timelines. This ambitious devolution shifts some key decision-making from central to county governments, creating a significant opportunity for more 'bottom-up' engagement, backed by a Constitution and legal framework that include provisions for the

government to share information, consult the public and regularly gather citizen feedback (weblink: <http://www.worldbank.org>).

The research proposed herein shall seek to study the practical application of the national values and principles of devolution and public participation as one of the ways of enhancing community participation in, thereby enhancing the efficacy of the, noise pollution control mechanisms in Kenya. It shall assess the extent of devolution of noise pollution control in Kenya; and the adequacy of the legal frameworks to encourage community participation through devolution.

2. THEORETICAL FRAMEWORK

The model on the Legal Realism theory of Karl Llewellyn which is an approach to thinking about and studying the results of the application of law, and subsequent social engineering through a systematic and purposeful change of the law and the practical application of the law and the results [12]. Its main theme throughout all of these related philosophies is a belief in the potential for improvement of human society (and therefore the human condition) through purposeful change imposed via politics and law [13]. According to Karl Llewellyn, law, including regulations, is determined by actual practices and attitude of judicial officers, lawyers, and police officers, and other enforcement agencies, rather than as the rules and doctrines set forth in statutes [14]. Justice Oliver Wendell Holmes, another realist, adds that law is made by human beings and, thus, is subject to human foibles, frailties and imperfections [15]. Applying the above theory in noise pollution control, then I do believe that efficacious noise pollution control laws and policies, can best be improved when all the stakeholders, including the members of the communities, police, judiciary, lawyers etc are involved right from the formulation to the implementation stages. Such laws and policies if enforced, interpreted and/or implemented well, shall contribute positively to behavioural and attitudinal change towards noise pollution control, and shall have a purposeful change to the community as regards the prevention and control of noise pollution in our counties.

Based on the notion that communities will have little interest in noise pollution control if they are not allowed to fully participate in it and participation is best achieved if noise pollution control is fully devolved to the community level.

This study is therefore based on the concept that devolution and public participation lead to the greatest levels of transfer of power to local levels [16]. Another concept upon which this study is based is the new governance concept. This concept advocates for decentralisation and challenges the traditional focus on formal regulation mainly in the form of command and control as the dominant locus of change [17]. New governance is facilitated by such factors as devolution; increased public-private partnerships and the emergence of new managerial technologies [18]. Many policy initiatives in different fields are now employing new regulatory approaches in legal practice that reflect this concept. One such field is Environmental law which has been at the forefront of new governance through the concept of civic environmentalism, which confronts the failures of traditional regulatory schemes and promotes participatory and decentralised arrangements to better conserve the environment and natural resources. The new governance approach of civic environmentalism aims to be participatory, collaborative and decentralized and focuses on problem solving. As such, policies must be integrated to allow those closest to the problem to contemplate their effectiveness and reasonableness. Government restricts its role to assisting in and providing incentives for self-implementation programs and encourages public participation.

3. NATURE AND SOURCES OF NOISE POLLUTION

According to other studies, the source of most outdoor noise worldwide are transportation systems, including road, air and rail traffic; generators, car alarms, emergency service sirens, office equipment, factory machinery, grounds keeping equipment, barking dogs, appliances, power tools, lighting hum, audio entertainment systems, loudspeakers, neighbourhood noise and public address system used by religious and social organisations. It was concluded that poor urban planning may give rise to noise pollution since side-by-side industrial and residential buildings can result in noise pollution in the residential area. He further concluded that road noise, especially at some distance from the road can be described as a steady state noise that does not fluctuate much, but rail and air craft noise are acoustically characterised by high noise levels of relative short duration. Further that the speed and exhaust systems determine the noise released

by road traffic. Noise from industrial installations, construction sites and fixed recreation facilities, on the other hand, radiate from a point source and shape of exposure area is generally circular [19].

Indiscriminate use of horn by the vehicles and widespread use of loud speakers in social and religious ceremonies cause several health hazards such as deafness, nervous breakdown, mental disorder, heart troubles and high blood pressure, head-aches, dizziness, inefficiency and insomnia [20]. The adverse effects of noise have not even spared the birds and other bio species like robins, sparrows, wrens and blackbird as those living near roads may not be able to hear each other and thus unable to contact for propagation [21].

4. THE CONCEPT OF PUBLIC PARTICIPATION IN ENVIRONMENTAL DECISION MAKING IN KENYA

Public participation, often called P2 by practitioners, according to Omondi and Wanjiku, is the process by which an organisation consults with interested or affected individuals, organisations, and government entities before making a decision. It is sometimes used interchangeably with the concept or practice of stakeholder engagement and/or popular participation. The 'public' are the people with an interest in or are likely to be affected, by a decision made, either positively or negatively. According to Omondi and Wanjiku, civil society organisations, who on their own, should not be confused with the 'public' as defined herein, have for long played a significant role in enhancing a culture of participation across the world [22]. According to Okidi, management of the environment should involve prominent community participation and that the legal empowerment of individuals and public participation is an essential condition of a good environmental law and practice [23].

There are several different public participation mechanisms, although these often share some common features. These include stakeholder engagement, large-scale consultations, focus group research, online discussion forums, or deliberative citizens' meetings. Civil society movements and organisations have embodied various avenues to include: public hearings, forming lobby groups, citizen report cards, social audits and citizen action groups [24]. They often initiate the formation of watchdog committees

and citizen advisory groups and facilitate their activities. Other avenues provided for by the law are the citizen's fora which are provided for in section 22 of the Urban Area and Cities Act, No. 13 of 2011.

For public participation to be effective, Omondi and Wanjiku proposed that public consultations should be open to all citizens, without discrimination, safeguards should be established to prevent consultative forums from being dominated by any one political group, organised interest, or politicians, public participation must have clear and specific purposes and the timeline and venues for public consultations be made known at least two weeks in advance of the consultation [25]. Time dedicated for public response, in form of feedback and questions must also be set aside [26].

There have emerged a number of arguments in favour of a more participatory approach, which argued that public participation is a crucial element in environmental governance, contributes for better decision making approaches. It is recognised that environmental problems cannot be solved by government alone [27]. By involving the public, the root of both causes and solutions of environmental problems, in environmental discussions, transparency and accountability are more likely to be achieved, thus secures the democratic legitimacy of decision-making that good environmental governance depends on. Arguably, a strong public participation in environmental governance could increase the commitment among stakeholders, which strengthens the compliance and enforcement of environmental laws [28]. In addition, some argue that the right to participate in environmental decision-making is a procedural right that "can be seen as part of the fundamental right to environmental protection". From this ethical perspective, environmental governance is expected to operate within a framework coinciding the "constitutional principle of fairness (inclusive of equality)", which inevitably requires the fulfilment of "environmental rights" and ultimately calls for the engagement of public [29]. Further, in the context of considerable scientific uncertainties surrounding environmental issues, public participation helps to counter such uncertainties and bridges the gap between scientifically-defined environmental problems and the experiences and values of stakeholders [30].

5. The Legal Regime of Public Participation in Kenya

The Constitution of Kenya now recognises public participation, a political principle, as a right. Article 10(2)(a) of the Constitution of Kenya provides that the national values and principles of governance include the participation of the people. Others co-related values and principles provided for therein include patriotism, national unity, sharing and devolution [31]. Further, Part 1 of Chapter 13 of the Constitution of Kenya sets out the values and principles for public participation in the public service, which includes noise pollution control function as devolved to the counties. Specifically, Article 232(1) provides that the national values and principles of public service include, "...*(d) Involvement of the people in the process of policy making...and (f) transparency and provision to the public of timely, accurate information.*" Article 232(2)(a) provides that the values and principles of public service apply to public service in all State organs in both levels of government.

Another secondary, but related concept to direct public participation is the issue of transparency. In this regard, Article 35 of the Constitution provides for the right to access to information. Access to information safeguards the right for every person to obtain information on the environment in custody of a public authority without a need for justification or proof of citizenship. Importantly, what counts as "environmental information" is widely defined to afford the right of access to information the widest construction. According to Omondi and Wanjiku, this right to know is an important guarantee of accountability in institutional activities [32].

Article 69 of the Constitution provides for the obligations of the state in respect to the environment and encourages public participation in the management, protection and conservation of the environment. It establishes systems of EIA, environmental audit and monitoring of the environment. Other aspects of public participation may be found in Articles 48 and 50 of the Constitution which provides for the right to access to Justice and to a fair hearing. The Environment Management and Co-ordination Act, 1999 (EMCA) has created a unique institutional framework for environmental management and coordination that has the public play an important role. EMCA provides for public participation in environmental matters.

EMCA establishes various institutions, such as National Environment Council (NEC), NEMA, NET, Public Complaints Committee, Provincial and District environment committees, National Environmental Action Plan Committee (NEAPC), all of which allow the public participation and/or stakeholder consultation and engagement in environmental decision-making.

The practice of Environmental Impact Assessment (EIA) as provided for in the Act enhances environmental democracy. It engages the public in vetting projects that impact on the environment. The requirement for publication of EIA study reports/advertisement allows the public for participation in reviewing an envisaged public project [33]. Section 123 of EMCA provides that any person may have access to any record transmitted to NEMA. The Environmental Impact Assessment/ Audit Regulations, 2013, are anchored under Section 147 of the Environmental Management and Co-ordination Act (EMCA). The EIA Regulations are said to apply to all policies, plans, programmes, projects and activities specified in Part IV, Part V and the Second Schedule of EMCA. The EIA regulations require the authority (NEMA) to invite the public to make oral or written comments on the report.

EMCA laid to rest the stringent requirement as to standing which had been a prime constraint to environmental litigation in Kenya. Under section 3(3), everyone whose environmental rights have been violated can apply to the High Court of Kenya for redress and remedy without having to establish that the action or omission complained against caused or is likely to cause a personal injury or loss to him or her. The judiciary in deciding environmental matters is obliged to be guided by principles of sustainable development including public participation in development of policies, plans and process in management of environment.

One crucial aspect of public participation is decentralisation, de-concentration and devolution of decision-making and implementation powers [34]. This could be the reason why section 87 of the County Government Act 2012 provide that citizen participation in County governments, where noise pollution control functions has been devolved, shall be based upon the principles of timely access to information, data, documents, and other information relevant or related to policy formulation and implementation; reasonable access to the process of formulating and implementing policies, laws, and regulations,

including the approval of development proposals, projects and budgets, the granting of permits and the establishment of specific performance standards; protection and promotion of the interest and rights of minorities, marginalised groups and communities and their access to relevant information; legal standing to interested or affected persons, organisations, and where pertinent, communities, to appeal from or, review decisions, or redress grievances, with particular emphasis on persons and traditionally marginalised communities, including women, the youth, and disadvantaged communities; reasonable balance in the roles and obligations of county governments and non-state actors in decision-making processes to promote shared responsibility and partnership, and to provide complementary authority and oversight; and promotion of public-private partnerships, such as joint committees, technical teams, and citizen commissions, to encourage direct dialogue and concerted action on sustainable development; and the recognition and promotion of the reciprocal roles of non-state actors' participation and governmental facilitation and oversight.

There are several other areas of interest of note where citizens have been given an avenue to participate in their governance at the county level. Section 15 of the County Government Act, 2012 grants any person power to petition the county assembly to consider any matter within its authority, including enacting, amending or repealing any of its legislation. In addition, section 88 of the County Government Act, 2012, gives the people the right to petition the County government on any matter under the responsibility of the County government. Section 89 makes it a duty to County government authorities, agencies and agents to respond expeditiously to petitions and challenges from citizens. Moreover, section 90 of the County Government Act, 2012 allows the conduct of referendum on local issues such as County laws and petitions; or planning and investment decisions affecting the County for which a petition has been raised and duly signed by at least 25% of the registered voters where the referendum is to take place.

Thus Public participation in the County planning process is mandatory as indicated in section 113 of the County Government Act, 2012. It even goes on further to list the various avenues that the county should make available for the people to participate. These include Information communication technology based platforms; town hall meetings; budget preparation and

validation fora; notice boards: announcing jobs, appointments, procurement, awards and other important announcements of public interest; development project sites; avenues for the participation of peoples' representatives including but not limited to members of the National Assembly and Senate; and, establishment of citizen for a at County and decentralised units. Section 115(2) of the act provides that each county assembly shall develop laws and regulations giving effect to the requirement for effective citizen participation. These laws and regulations include those on noise pollution control which is a devolved function.

The Urban Areas and Cities Act, 2011 also has provisions that allow for citizen participation. The act at schedule 1, and pursuant to section 5, provides that such urban areas and cities should be able to manage air noise pollution control services. Section 22 of the act provides for the citizen for a where residents of a city or urban area have the right to: contribute to the decision-making processes of the city or urban area by submitting written or oral presentations or complaints to a board or town committee through the city or municipal manager or town administrator; prompt responses to their written or oral communications; be informed of decisions of a board, affecting their rights, property and reasonable expectations; regular disclosure of the state of affairs of the city or urban area, including its finances; demand that the proceedings of a board or committee and its committees or sub committees be: conducted impartially and without prejudice and untainted by personal self-interest; the use and enjoyment of public facilities; and, have access to services which the city or municipality provides. These rights have been elaborately provided for in the second schedule to the Act. Section 24 of the Act provides for the publication of important information, and for access of the information by a resident upon request. These information may include those relating to the policies and programmes, relating to the control, and or management of air noise pollution.

6. THE INTERNATIONAL LAW REGIME FOR PUBLIC PARTICIPATION IN ENVIRONMENTAL DECISION-MAKING IN KENYA

As early as 1948, the Universal declaration on Human Rights (UDHR) provided the framework for generalized access to information. The International Covenant on Civil and Political

Rights promulgated in 1966 sought to guarantee the right of access and dissemination of information by securing the freedom of citizens of the member countries to seek, receive and impart information and ideas of all kinds including information on environmental issues. Closer home, the African Charter on Human and Peoples' Rights in 1981 guaranteed that citizens have the rights of access to information, participation and justice. These rights, under the charter, were granted in addition to the right of the citizens to a general satisfactory environment favourable to their development. By virtue of Articles 2(5) and (6) of the Kenyan Constitution, these conventions have become part of our laws [3].

Principle 19 of the Stockholm Declaration advocates for education in environmental matters for the younger generation as well as adults giving due consideration to the underprivileged in order to broaden the basis for an enlightened opinion and responsible conduct by individuals enterprises and communities in protecting and improving the environment in its full human dimension. The call for an enlightened opinion presupposes participation in decision-making. The enlightened opinion is to be taken on board in decisions affecting the environment. The 1992 Rio Declaration makes provisions for public participation in Principles 10, 20, 21 and 22.

The 1988 United Nations Economic Commission for Europe Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental matters (or the "Aarhus Convention") is an international agreement that lays down an elaborate set of basic rules to promote public involvement in environmental matters and improve the enforcement of environmental policies and law. It grants the public access to environmental information, provides for participation in environmental decision-making, and allows the public to seek judicial redress when environmental laws are infringed. As such, it represents a milestone in strengthening democracy in environmental policy-making and environmental protection, and improves the effectiveness of environmental policies and laws. The AARHUS convention is founded on the pillars of access to information, public participation in decision-making and access to justice. Articles 14(1)(a) of Convention on Biological Diversity encourages public participation in environmental impact assessment of proposed projects that are likely to have

significant adverse effects on biological diversity. It implores the promotion of exchange of publicly available information.

7. CONCEPTUALISING DEVOLUTION AS A FORM OF GOVERNANCE

Devolution is a complex and wide subject with different connotations and meaning across time and space. It is often conceptualised as a sub-category or level of decentralisation. Rondinelli, Nellis and Cheema define decentralisation as having three levels; de-concentration, delegation and devolution. They define de-concentration as the handing over of administrative responsibility to lower levels within central government, delegation as being the transfer of managerial responsibility for specifically defined functions to organisations that are only indirectly controlled by central government and devolution as the strengthening of sub-national units of government which are outside the direct control of central government [35].

According to Odera, devolution is a form of decentralisation in which the authority for decision making in respect to finance and management is transferred to quasi-autonomous units of local government. For him, devolution is a political concept that denotes the transfer of political, administrative and legal authority, power and responsibility from the centre to lower levels [36]. Cirelli takes a similar position on transfer of powers to local levels of government, albeit focusing on the environmental sector. He observes that there has been a growing tendency towards the devolution of powers of central government in the environmental sector to local authorities. It is his argument that increased devolution of power to the local level may facilitate adequate consultation of communities [37]. These three works are important to the extent that, they discuss the meaning and importance of devolution in the decentralization of governments. The key rationales for decentralisation are well articulated by Musgrave [38] and Oates [39]. They argue that decentralisation may improve governance in public service provision by improving the efficiency of resource allocation. They thus argue for decentralisation from an economic point of view. They, however, further observe that sub-national governments are closer to the people than the national government and as a result, have better knowledge about local preferences. Thus local governments are therefore better placed to respond to the diverse needs of the

local people. In addition, devolution narrows down the social diversity and subsequently the variation in local preferences. This reduces the opportunities for conflicts among different communities. Tiebout notes that devolution promotes competition among the county governments and thus enhances the chances that governments will respond to local needs. As a result, counties are able to attain higher levels of efficiency in public service and in allocation of public resources. Musgrave [40] further states that devolution can enhance production efficiency by promoting accountability, reducing corruption, and improving cost recovery.

Arguments favouring devolution of resources to local levels of governance emphasise that the enhanced decision-making power, authority and control over resources play a pivotal role in economic and social development. They contend that devolution will result in increased citizens' participation in local governance where 'local governments are perceived to have the capacity to make political and financial decisions affecting their economic and social welfare' [41]. The improved allocation of resources is the most common theoretical argument for devolution [42]. By bringing government closer to local people, it is asserted that the government will be better informed to local needs and preferences, resulting in increased accountability and enhanced responsiveness of officials and government at the empowered local or regional level [43].

There are however few studies on legislation at the county levels. There is no consensus on the perceived benefits of legally recognised self-government. There are also conflicting perspectives in the academic realm regarding the desirability and potential consequences of devolution and political decentralisation. Arguments against decentralisation fall into two categories, focusing either on national effects or local effects [44]. At the national level, scholars have argued that the establishment of sub-national (or sub-provincial/ territorial) governments can lead to fiscal deficits, as local government debts are reluctantly absorbed by the national government [45]. At the local level, rather than increasing democratic accountability, it has been argued that local elites can benefit disproportionately from devolution; effectively creating 'authoritarian enclaves' in local settings [46]. Ochieng argues that there is always a possibility of tension between the central and

local government in attaining a reasonable balance of power in managing the environment and natural resources. If such tensions result in adversarial relationships that undermine the application of the subsidiary principle, the ultimate outcome is the ineffectiveness of both the decentralisation and the environment or natural resource policy. Similar outcome may result from lack of effective co-ordination and synergy among various institutions responsible for environmental management. Ochieng further argues that coming from the background of command-and-control regime; the citizenry still consider environmental management as the preserve of the governmental institution. Thus there is need to create greater awareness about the emerging environmental issues such as noise pollution control [11].

Other scholars look more specifically at devolution. For example, Dilys Roe et al. (eds) posit that there is increasing focus on devolution and on creating local level conservation responsibility. Devolution for them is the way forward for natural resource management in many countries [47]. The gap does not provide for the mechanisms of the said devolution through legal frameworks.

8. PRACTICES IN NOISE POLLUTION CONTROL WITH RESPECT TO DEVOLUTION

Giving power of self-governance to the people and enhancing the participation of the people in the exercise of the powers of the state and in making decisions affecting them is one of the objectives of devolution provided for under Article 174(c) of the Constitution. One of the aims of devolution is to create more intense community involvement in order to adjust service delivery models to the communities' specific needs [48]. Most of the studies and literature on noise pollution control practices are not local. Generally however, action to reduce environmental noise has a lower priority than other environmental problems such as air and water pollution. Recognising this as a prime issue, the European Commission adopted the European Noise Directive requiring major cities to establish a noise management policy with the first step being to assess the current noise climate in the city by gathering real world data and building noise maps in order to better understand the problem and support the creation of local action plans [49].

According to the United Kingdom's Department of Environment, Food and Rural Affairs (DEFRA) and the Chartered Institute for Environmental Health (CIEH), local authorities have a range of roles involving responsibility for noise control. These include investigation and abatement of statutory nuisance; land use planning; entertainment licensing; building control; and residential landlord [50]. Other local authority departments with responsibility for noise services include the Local Authority Building Control and approved private building inspection services - ensure compliance with Part E of the Building Regulations 2000 [51] relating to sound insulation between, and reverberation in the common parts of new and converted residential buildings and acoustic conditions of schools. The proactive implementation of national and local noise policy to a considerable extent is achieved through the planning processes with external agencies who play a role in controlling noise pollution (53).

In Northern Ireland, The Department of the Environment (DoE) is responsible for planning control. The Planning Service, an agency within DoE, administers the development control and development plan functions. The Planning Service considers noise issues to be material to the determination of planning applications and they are taken into account in preparing developmental plans. District council Building Control Officers ensure the compliance with the requirements of the Building Regulations relating to sound insulation in new and converted buildings. The Northern Ireland Housing Executive (NIHE) controls public sector housing and, as landlord, ensures compliance with tenancy conditions. However, Environmental Health Officers investigate noise complaints and enforce statutory noise nuisance provisions relating to NIHE dwellings. The Department for Regional Development's Roads Service must publish details of proposed trunk roads - and the public has the right to object on any grounds, including noise. The Roads Service must also consider the noise impact of road construction and similar works and administer noise insulation grant schemes. The police have controls to prevent the illegal use of motor horns. They also enforce the provisions of the Motor Vehicles (Construction and Use) Regulations (NI) 1989 regarding excessively noisy vehicles and they deal with noisy activities which may constitute public order offences. Complaints about noise from civil aircraft can be made to the Department for Regional Development, Ports and Public

Transport Division. Under the Airports (NI) Order 1994 the Department of the Environment in Northern Ireland also has a role to play in relation to civil aircraft noise at airports. It has power to instruct an airport operator to limit noise and vibration and may make a scheme requiring them to pay grants towards noise insulation. Complaints about military aircraft/helicopters should be addressed to the Army Headquarters.

The development of effective noise services requires written policies and procedures which set out in clear, unambiguous terms how the service is to be scoped, organised and delivered (78). The local authority may delegate the formulation and adoption of noise management policy to officer level without need for ratification by members. That delegation must be by formal resolution otherwise it will be *ultra vires*. In addition an authority will routinely delegate the operation of that policy at case level to those same officers. In such circumstances the officer is entrusted with both formulation and implementation of policy. As a guide, DEFRA and CIEH suggested that the following elements should be addressed in strategy, policy and technical procedure documents for noise services: the title and commencement date of the document together with reference to any amendments; the title of the officer responsible for maintaining quality; details of the legal context in which the service operates; a description of the organisational structure, including specific posts or named officers as appropriate (75); details of how the service assures the competence of its authorised officers, including professional and technical qualifications, experience and developmental training, etc.; a detailed description of the scope of the service (78), including provision for responding to service requests out of hours; a digest of service standards, including relevant performance indicators and targets, where these have been developed; a practical definition of what constitutes "resolution" of a complaint; an enforcement policy reflecting the national enforcement concordat; a review of stakeholder issues, including equal opportunities, ethnic monitoring and customer feedback; service level agreements and procedures for liaison with different local authority departments, police, the Environment Agency and other external agencies as relevant; a set of detailed, procedural guidance notes outlining how the service intends to achieve consistency in dealing with particular matters, such as: investigating a complaint, prioritisation of complaints, record sheets, the

use of notebooks etc. - written evidence, the taking of witness statements, the use of alternative dispute resolution, checklist for assessing correct service of a noise notice, service of abatement notices, appeals against abatement notices, defences in proceedings for breach of abatement notices, etc. The procedures described above may form part of the noise service's quality management system. It is recommended that key elements of the strategy, i.e. policy and strategy/enforcement procedures, are subject to scrutiny and approval by elected members and that the strategy is formally adopted by the local authority, thereby ensuring corporate status and commitment.

For a local authority to discharge its statutory duties, a minimum standard of service required to be resourced, monitored, achieved and documented. Service standards relevant to those duties and local policy should be established at least for the following: response policy including target response times; provision of technically competent enforcement officers; administrative support in all stages of the complaint; complaint recording and priority criteria (screening); communications within the service and noise sufferers and makers; links with other local authority service departments; liaison with police and other external agencies; health and safety of officers; maintenance and calibration of measurement and recording instruments; individual case and overall service evaluation; and agency arrangements with other authorities. The standards must provide for specific and measurable outputs.

9. CONCLUSION AND RECOMMENDATIONS

It is concluded that noise pollution has a serious implication to health, medical and economic problems to the human being including flora and fauna. Therefore, there is a need to adverse effects of airborne pollution, including those produced by noise with emphasis on the best strategies, beyond the simple command and control instruments currently in place at the national level that will include change in behaviours in ways that shall be beneficial to the whole society. There is a need to balance incentives to elicit compliance with, and, command and control mechanisms in the interest of environmental sustainability that requires the framing of the enforcement mechanisms that yield optimal compliance. On issues of inclusive participation, a strong public participation is

needed in environmental governance that increases the commitment among stakeholders, strengthens the compliance and enforcement of environmental laws. As for the community support groups and government agencies need to increase awareness of environmental rights and the benefits of sustainable environment regulation to safeguard a healthy environment for all Kenyans.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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