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# **THE NEED FOR INTEGRATION IN ENVIRONMENTAL GOVERNANCE—NATIONAL GOVERNMENT, LOCAL GOVERNMENT, ACADEMIA, NGOs, PUBLIC AND INDUSTRY: EXAMPLES OF AIR QUALITY MANAGEMENT IN EUROPE, ASIA, AND AFRICA**

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**Introduction**

As countries begin to develop economically, they usually undergo a range of environmental pressures related to industrial growth, increased road traffic and rapid urbanisation. Existing governance structures are often inadequate to ensure that environmental and public health protection is maintained at acceptable levels. Even in cases where there may be advanced capabilities in terms of the measurement and assessment of pollution there may not be the structures available to ensure that the resulting knowledge is used to good effect. This paper looks at two key areas of governance; the governmental sector and the academic sector. In the first section, it argues that the management of air and other environmental commons, requires a vertically and horizontally integrated system of governance for efficient and effective management. Following this, the paper looks at the special position of academia within the environmental governance framework and examines how this positioning can be used to greatly enhance the effectiveness and credibility of the governance process.

***Vertical Integration***

Through studies of the implementation of the EU Ambient Air Quality Framework Directive across Europe, it has become clear that whilst all European Member States are working under the single ‘umbrella’ legislation provided by the Directive, every single Member State has its own unique experience of transposing the requirements of the Directive into their domestic law, based on their own legal and political structures. One of the key differences between Member States lies in the relationships between different layers of government, mainly between the top

national level of government and the principal local or regional level of government (usually representing municipalities or districts). When looking to try and develop air quality management frameworks in countries that do not have the external responsibilities, such as the EU Directive, to comply with, it is still important to establish appropriate lines of vertical integration between governance levels.

### **Too Little National Control**

Following the end of the previous heavily centralised and authoritarian political regime in 1998, Indonesia followed a process of decentralising many governmental systems including environmental management. In a number of sectors this was taken to the extent of granting regional autonomy to such an extent that little support or guidance is provided for carrying out environmental management tasks by the national government. In some cases provinces and districts are no longer even bound by national standards (World Bank 2007, Djogo and Syafv 2004). The lack of clarity for air quality responsibilities is reported to be hindering attempts to improve air quality (WHO 2007). A review of air quality management regulations in Indonesia by an Indonesian Environmental NGO (Pelangi, 2003), involving multi-stakeholder workshops and public dialogue, identified the urgent need to try and harmonise the shared responsibilities of local, provincial and central government stated in the Air Pollution Decree (Decree No. 41/1999) with those set out in the Regional Autonomy Law (Regulation No. 22/1999).

In extreme situations devolution occurs to such a degree that very little control is still held at a central, national level and it becomes difficult for government to ensure that provinces are undertaking comparable work. This has the potential to cause problems where there are no uniform processes and methodologies adopted between provinces. It therefore becomes impracticable for the national government to be able to maintain an overview of what environmental management related work is taking place as they do not necessarily have access

to all the information from the provinces. Even where information is communicated, the lack of a national framework for specifying methods for air quality related management and practice means that air quality studies from separate provinces cannot be reliably compared as there is no universal set of norms and standards by which the work has been carried out. Again, in the case of Indonesia, the national Environmental Management Framework (Regulation No. 23/1997) does not specifically address air pollution, let alone how to ensure coherent and comparable management practices.

### **Too Much National Control**

A contrary example can be seen in the way that Thailand operated in the past. The national government had a very strong Pollution Control Department (PCD) which was responsible for air quality management across the whole country. As such, it set its priorities on confronting the worst air quality problems in the country, which were mainly in the capital Bangkok. The dominance of PCD activities in the capital prevented air quality management being effectively integrated with the activities of the local authority, the Bangkok Municipal Administration (BMA). However, the BMA sought to increase their capacity for air quality management in order to be able to take responsibility for developing their own air quality action plan (Chatterton 2003). Once the PCD had to assign less of its resources to activities in the capital, it was able to develop its regional capacity to a greater extent providing more equitable services.

### **International Integration**

One of the key reasons why it is important for the national level of government to maintain a good overview of air quality management work across the whole country is so that it can use the work to help assess and report on conditions with regard to international commitments to reduce pollutants. These obligations under various treaties and agreements are not the only interaction that must take place on the international scale. Within the modern globalised market,

governments of developing countries are faced with the challenge of deciding on whether or not they should establish standards for environmental quality on a par with those of more developed nations. On one side of the argument, developing countries are often faced with a heritage of old and poorly maintained industry and appliances, along with a lack of capital with which to modernise them. On the other, their populations have as much right to be protected from pollution as those of developed nations. However, the enforcement of high environmental standards brings with it the risk of affecting the country's economic competitiveness, and the ability to improve quality of life through economic development. This choice should not necessarily rest entirely within government, but should include the citizens who would either benefit from the increased employment or endure the impacts of air pollution on a day-to-day basis. However, in recent discussions regarding the new European Directive on Air Quality, it has become apparent that poor environmental standards in developing countries also threaten efforts to improve conditions in developed countries.

### **Public Consultation and Participation**

Fully integrated vertical governance has to include not just governmental structures, but also non-governmental stakeholders, especially the general public. The task of encouraging public involvement in air quality management in an open and democratic manner *can* be seen as a significant challenge within developing countries as the range of access to information resources and literacy is often far more diverse than in developed countries. However, very acute pollution problems can often create a strong degree of interest from communities in addressing problems, and where economic development is accompanied with recent advances in democracy (such as can be found in Indonesia, the Philippines and South Africa) there can be a far greater desire for citizen engagement in environmental management than is common in more developed countries. In order to ensure access to a wide-range of public participation the involvement of a range of NGOs and other representative groups is often essential, particularly

if the interests of those worst affected by air pollution are to be considered. Access to political power varies between groups in a society and it is often the most marginalised groups who have least access to power. Poor and marginalised groups are often those who also suffer the worst exposure to air pollution and in this regard the situation in the developing world is little different from that of the developed world. Certainly in the UK, clear patterns have been found between social deprivation and exposure to poor air quality (Gegisian et al. 2006), however the population exposed to adverse concentrations of air pollutants is likely to be larger in developing countries.

### ***Horizontal Integration***

As with the vertical dimension of government, integration is important horizontally, between government departments. Air Quality Management is generally seen being the preserve of environmental management departments within government, at any level. However, whilst this may be the most appropriate place for responsibility for monitoring and assessment to be carried out, the activities controlled by other governmental departments (such as road transport, mining, power generation etc.) often have greater impacts on air quality and so they need to be given official responsibilities for involvement in the process of improving air quality. The failure in the UK to designate responsibilities in primary legislation for engagement in air quality management to non-environment departments has been judged to have been a significant hindrance to the development and implementation of action plans (Chatterton et al. 2007). Where consideration of air quality has been specifically written into the duties and responsibilities of sectors outside environmental management (such as transport and land-use planning) there have been significant improvements in the levels of communication that occur between sectors, providing greater hope for improvements in air quality than existed previously.

## **A Structured Framework: The South African Example**

In developing the South African National Framework on Air Quality, experience from studying air quality management systems in the UK, Europe and further a field was used to incorporate explicit responsibilities for, and relationships between, different levels of government in order to ensure “coordinated, integrated and cohesive air quality governance” (DEAT 2007). The National Framework sets out clear responsibilities for the Department for Environment and Tourism (DEAT), for Environmental Departments in Provincial Government, and for Municipalities. One of the primary actions for each level of government was the designation of a specific air quality officer to take responsibility for ensuring all the other relevant requirements of the Framework and related legislation are undertaken.

Whilst provinces and municipalities have to comply with national ‘norms and standards’ relating to controlling emissions from processes they are also allowed the freedom to designate tighter controls within their area of jurisdiction in order to enable them to meet ambient air quality standards. The National Framework sets out a clear ‘Environmental Governance Cycle’ (see Figure 1) which recognises the need for a gradual and continual process for assessing pollution and mitigation measures. By following this cycle provincial and municipal governments will be able to clearly demonstrate the need for more stringent local measures where these are necessary.

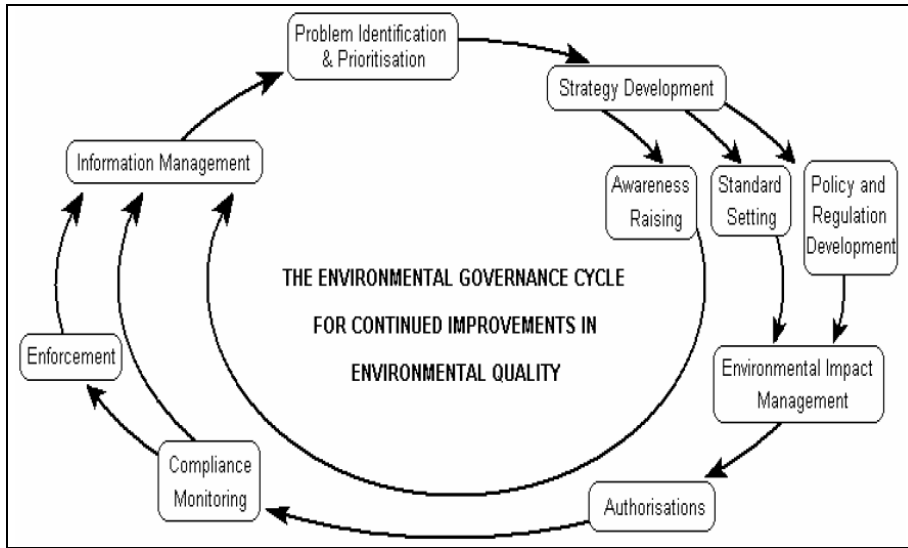
In terms of ensuring adequate horizontal integration, the South African National Framework specifically lists 12 government departments other than DEAT that have “an interest or responsibilities” in the air quality management process. Figure 2 shows a diagram of the ‘3D-Governance Model’ set out in the National Framework. This model takes the Environmental Governance Cycle discussed above, and demonstrates how this process of assessment and

action occurs simultaneously both within different policy spheres (linked in a hub-and-spoke manner) and at different levels of government. Responsibilities at each level and within each 'hub' are clearly identified and explicitly linked in both the horizontal and vertical domains. The importance of regular and appropriate communication within and between the domains lies at the heart of the effective functioning of integrated air quality governance. In order to make explicit that cleaning up air pollution is not merely a process of exercising governmental authority, the National Framework also goes on to outline the responsibilities of Industry, Labour and the General Public within the process.

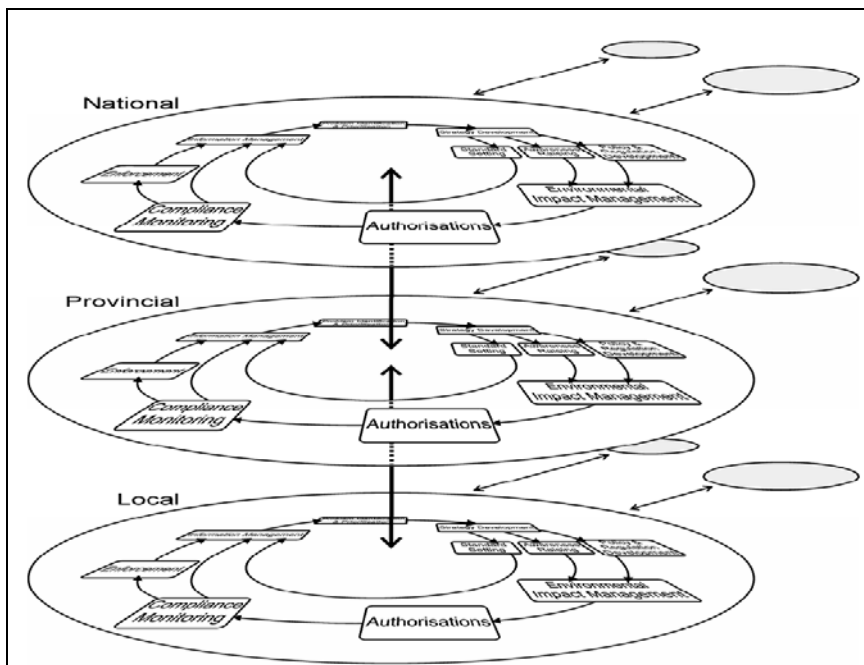
In addition to integrating management of air quality with management of pollution sources, the National Framework also seeks to integrate with other environmental policy areas. One of the key aspirations was the integration of air quality with climate change policies. Despite having no current obligations under the Kyoto Protocol, levels of economic growth in South Africa are such that it is expected that future responsibilities are likely. Therefore, the National Framework has taken the forward looking step of directly establishing links between conventional air pollution emissions and greenhouse gas emissions within the framework so that integration of the two processes in practice is more likely to occur as the profile of climate change rises on South Africa's political agenda (DEAT 2007).

### **Enabling Integrated Governance**

Although an effective policy framework is important in developing an integrated governance system, the most essential elements are the dynamics and communication within the framework. For these to work well the framework needs to allow and encourage the participation of all stakeholders (government, industry and public) and to do this it must ensure adequate and transparent dissemination of information, and constantly build the capacity of all sectors interactions.



**Figure 1: The Environmental Governance Cycle (DEAT, 2007)**



**Figure 2: The 3D Governance Model (DEAT, 2007)**

### ***The Particular role of Academia***

Although the role of Universities is often seen only as providing either higher education courses leading to degrees, or theoretical research, academia has a much greater role it can play within environmental governance. This area brings to the fore many of the activities that have always been at the heart of the academic process, but it also encourages an integration with the end-user policy and practice communities that allows the university sector to fulfil the increasing need to justify its special position.

### **Higher Education**

Academia can provide specific degree courses in environmental governance – or in areas of applied environmental science necessary for backing policy making. It can also integrate elements of sustainability into all other courses. Universities in the UK are increasingly looking to introduce ‘core modules’ on sustainability into all of their degree and post-graduate programmes. These will ensure both a firm overview of sustainability issues and specific insight into how they apply to the students’ particular subject areas.

### **Training**

Because universities are established teaching organisations, they are the ideal base for carrying out unbiased teaching/training for individuals and organisations. This can ensure that people involved in the environmental governance process have the latest up-to-date knowledge of issues and does not necessarily rely on the slow progress of individuals through the full academic system. Training modules can also be assembled to allow participants to obtain accreditation – either in terms of continuing professional development (CPD), vocational diplomas, or academic degrees.

## **Knowledge Exchange**

Interaction with the policy/practice sector in order to provide training provides a one-way transfer of knowledge. However, when this relationship is properly explored the flow of knowledge and experience can travel effectively in both directions creating a valuable exchange that allows Universities to base their work on answering real-world issues.

## **Research**

Although there is still a need for some 'blue skies' research capacity, academia increasingly has to base its research on meeting the needs of end-user communities. Whilst many areas of science can rely on industrial needs to finance targeted research, environmental sciences are not often the recipient of industrial funding. This means that government funding is often essential for these subjects and therefore meeting the specific needs of the environmental governance community is of great importance.

## **Consultancy**

As research funding opportunities have begun to decline, many universities have begun to operate in the same sphere of action as independent consultancies. One big advantage of this is the ability to enhance the 'knowledge exchange' aspects of their work. This means that the experience gained from individual consultancy style jobs can be fed into the much broader understanding of the operation of environmental governance. There are advantages too for potential clients (especially local, regional or national government) in that universities are often regarded with a greater degree of respect than private consultancies as they are seen to have an objective standing and are not so immediately driven by profit that they would produce the results the client wants. This is particularly helpful when carrying out public consultations or other work involving direct interaction with the public.

Other areas which give universities a strong advantage in supporting the environmental governance agenda include their ability to work in an inter/multi-disciplinary manner. Not only do they house a very wide range of disciplines, but most now have special research offices whose role it is to help co-ordinate and integrate the research and other activities that go on between very different areas of the university. This includes not just linking different subject areas, but also linking those areas of theoretical study with those more grounded in real-world applications. Also, it is often found in both developed and developing countries, that where local or national government establish a skilled workforce in environmental areas, these people frequently leave the public sector to go and work for private consultancies where there are often higher levels of pay available. The particular characteristics of academia mean that it is, to some extent, immune to this problem as it tends to attract a workforce that is often specifically attracted to working within a University

### ***Conclusion***

For environmental governance to work it needs to be inclusive of all sectors of government and society. The rapidly changing nature of societies undergoing industrialisation and economic development, along with the fast changes we may undergo in environmental conditions due to climate change mean that policies and the knowledge and understanding that drives those policies cannot stand still. The academic sector can play a key role within this constant need for good governance by balancing the interests of state and society (both citizens and industry), assessing the effectiveness of areas of the governance cycle, developing tools to implement policy and training the people to carry it out.

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