5. Lessons and Main Themes

IDEA is a practical effort to understand and resolve some of the very trying difficulties of environmental management, and to make that knowledge available for use in similar circumstances. A reasonable measure of success can be reported by the IDEA programme, both in terms of project outputs and in terms of transferable learning. In addition the knowledge base in its environmental management network has grown substantially.

What is satisfying from the perspective of the IDEA research task is how the programme is able to validate, from practical case studies in environmental management, many of the propositions about management and organisations which, in the last year or two, are finding favour in the academic literature of both private and public sector management and environmental mediation. In this sense, IDEA has been a successful empirical effort in organisational development for environmental management.

It is perhaps even more satisfying that the participants in the IDEA programme found the methodology, which they themselves helped to develop, useful in addressing the serious environmental challenges identified at the beginning of the programme. This is especially true of the team leaders, most of whom, although eminent scientists or administrators, had no particular background in environmental management or institutional development. In each project, tangible outputs in institutional development have resulted, and indicators of environmental improvement have been identified as objectives or measures of intended results. The views of team leaders on the advantages and lessons of the IDEA methodology is given in section 4.6 below.

The dimensions of institutional development
Institutional development encompasses legal systems, organisational systems and human resources development. Improvements in these

may need to be pursued more or less simultaneously for maximum effectiveness.

Legal systems include the necessary laws, regulations and environmental standards, and the framework of government to implement these. These are necessary but not sufficient conditions for successful environmental management. The legal system also embodies formal arrangements for centralisation or decentralisation of planning and implementation, often a critical issue in development, and questions on the best institutional arrangements

of government, for example, whether an environmental ministry or agency status is most appropriate to the country tasks.

The term 'organisational' development in IDEA is used to denote new formal and informal linkages within government, and beyond government to business, and the voluntary and community sectors. In other words, it is inter-organisational development. The development of organisations comes from investment in human resources and in the development of management skills, such as in the IDEA programme. This is the key to improving the management process, both in terms of personal and professional development, and in terms of the development of all other organisational, institutional and legal structures of support. IDEA has been based on the development of the managerial skills of a widening network of key individuals, and all improvements in environmental management systems have rippled out from them.

This underscores the point that, although developing countries face many enormous environmental problems, most of these will only be resolved by the development of local skills and solutions. We may analyse the problems at a global or national scale, but the resolution of big problems will be the result of aggregating smaller tasks. The process of local, iterative problem redefinition, as used in the methodology of IDEA projects, generates the necessary local commitment to resolving problems and an understanding of the skills needed to implement that commitment. The experience of IDEA suggests that even the partial implementation of more productive management approaches creates a generalised pattern of problem-solving and builds confidence in indigenous abilities in environmental management.

The network approach to enhanced environmental management

It was noted that the seeming inability of traditional 'command and control' bureaucracies to deal with complex environmental problems has become a major theme for organisational, business and development analysts worldwide. Alternatives have been suggested under many names, but they all boil down to what has been described as 'an evolving network that should be flexible, open and capable of restructuring itself over time' (Sagasti, 1988).

Increasingly therefore, forward thinking environmental managers are allowing and sanctioning task-oriented, informal groups to assist in the environmental management process by defining the problems and developing consensus around the way forward. The IDEA projects, which in attempting to carry out their tasks have evolved into just such networks, validate that such informal, parallel networks, drawing legitimacy from their interest in clearly defined environmental problems, can be useful complements to formal bureaucratic structures in environmental management. They are not, however, a replacement for the traditional bureaucracy as they do not carry out any routine functions of government. Rather government will find it helpful to sanction and participate in such networks, as equal partner to business and community/NGO groups to address special and urgent tasks.

The characteristics of the parallel network have been described as: team or equal partnership relationships; vision and value-driven leadership by a key individual; flat, flexible organisational structures; emphasis on participation; and undertaking continuous performance review and improvement. Within the CCGTM/IDEA Network the application of these principles to real time management problems in member countries is called the 'quality management' approach. The concept of quality management is based on the assumption that improvements in the outcomes of management are best sought within the management process itself, rather than from external inputs.

At the same time, many governments the world over are wrestling with questions at how best to allocate functions among jurisdictions, and how to organise administration, monitoring and pollution control for effective action. The IDEA Project in Nigeria, for example, is beginning to address this challenging question. The question is how to link initiatives at various levels in what we have earlier called a 'nested' network, to carry out objectives in the most effective and

efficient manner while avoiding traditional bureaucratic pitfalls and constraints and wasteful duplication of effort. In technical terms, this is the question of subsidiarity, which is as relevant in the European Community as in Nigeria, and constitutes a fundamental challenge to public administration.

The notion of nested networks within IDEA also explains how local network members also become members of the wider IDEA/CCGTM network, and can call on that network for support, advice and peer review. This support is not 'external' to the management process, as the more traditional consultant might be, but expands the 'team' addressing the environmental management to include expertise from other countries. The team is them engaged in a process of mutual learning, and relationships among team members are non-hierarchical.

IDEA therefore has helped to develop a greater understanding of the potential for cost-effective, international network support for national or regional action on environmental management tasks. However a successful, task-oriented network like IDEA (as opposed to the more usual 'staying in touch' network) requires outside funding and considerable nurturing and maintenance to survive and prosper. Funding bodies are, on the whole, not geared to network support; for many their terms of reference preclude it. IDEA has been fortunate that its main funder (ODA) was perceptive enough to see the potential of the action research methodology to realise multi-functional objectives, thus (hopefully) satisfying research objectives as well as generating practical and valued outputs by the project teams.

The international network also provides a means of diffusion of additional knowledge generated in areas such as environmental legislation, pollution control technology, state of the environment reporting and others, which is documented in the many reports. Each of the project teams has become a 'node' of expertise on particular topics within the network.

Linkage between public and private sectors

All of the IDEA projects can be said to have fostered new linkages within the public sector, within central governments and between central, state and local governments. Some projects have extended the network further and make interesting linkages with the private sector, for example, with the Chamber of Commerce and Industry and

multi-national corporations in Zimbabwe and Nigeria, with the main construction and sugar industries in Mauritius, and with small industrialists in Malaysia.

The waning of socialist ideology, and obvious advantages of linkage with the private sector in economic development, have made this an exciting and challenging area for improving environmental management. The result, as Coulson (1990) suggests in his review of public administration and development in Tanzania, is:

> For most economic activity, it will be an enabling administration, promoting private sector solutions or partnerships with the private sector, and only intervening where the market or the private sector will not carry the risks involved.

These changes are also spurring an expansion of the notion of sustainable development from that of the realisation of carrying capacity to a broader notion of an on-going process of mediation between production needs and the maintenance of the biosphere. Such new linkages between government and the business sector, with both small scale and medium enterprises, and at the big business level, will therefore be at the forefront of organisational challenges to realise sustainable development.

These linkages appear somewhat easier to foster with environmentally conscious multinationals and more difficult to foster with small scale industrialists, such as in Malaysia, who may be highly suspicious of government. The task of working with, and developing, organisations of small scale businesses is similar in many ways to tasks of community organisation and requires similar skills of diplomacy and empathy. Equally, any government which hopes to pursue sustainable development objectives in any field will need to 'learn' to work with the private sector.

Linkage with non-governmental organisations

In chapter two, the common failure of vertical integration between policy making levels of government and small scale agricultural and backyard industrial producers was identified as a cause of failure in policy implementation. While organisation of such producers can be difficult, clearly it will occur through non-governmental organisations. As with other organisations with a hand in development, the ability of NGOs to participate productively in

development management tasks depends on their organisational capacity. In a discussion paper, the World Bank suggests:

> People's propensity for organising is an immense development resource and NGOs are an adequate vehicle for tapping it... NGOs should not be regarded just as a conduit for funds or as a means of implementing programs, but as a resource in themselves, a type of development capital. Thus building them up is development (Cernea, 1988, p.50.)

Strong NGOs can be active partners in development and environmental management. It has not been within the capacity of IDEA to address the question of organisation building of NGOs per se, but within IDEA Programme new, productive linkages between NGOs and the public and private sectors are beginning to emerge to redress failures of vertical integration.

Environmental management at the ecosystem level
One of the most interesting aspects of the IDEA projects taken together, is that almost every one has gradually redefined itself away from its initial conception of a pollution problem within certain territorial boundaries. In six of the seven cases the problem has been redefined at a larger spatial (and hence institutional) scale, and in one case, Zambia, the problem had to be more closely defined. But all the projects have arrived at a more or less similar conception of the environmental control task as a regional management task, that is as an extended land use and water management task requiring ecosystem planning.

The fundamental need for planning on an ecosystem basis is not surprising, and again IDEA validates empirically what a number of commentators argue in general. For example, Rowe (1990) of the Department of Crop Science at Saskatchewan, argues:

> In practice sustainability has to be a regional concept. We used to call it land use planning... Fortunately we can substitute for its two-dimensional flatness a better, more inclusive concept, perceiving a world surfaced with three-dimensional ecosystems in which we are immersed. These creative spaces are the focus of regional planning whose ecological aim is a sustainable earth.

In a similar vein, Fairclough (1989) of the Environment Directorate at the European Community argues:

> Most developing countries have... economic plans, forest plans, plans for tourism, industry, services, ranching etc – not to mention plans for rural agricultural development. All these plans and development efforts impact on one another; and can conflict with one another. My simple thesis is that, in any attempt to harmonise economic development with sectoral objectives, a land use planning overview is essential... a planning framework within which public bodies, the private sector and individuals can all operate.

Fairclough argues that only such a framework can provide the vehicle for mediation among competing objectives, such as economic development and environmental protection. The alternative is 'continuing conflict'.

The experience of the Malaysian IDEA team is a good example of how it is often necessary to redefine the original problem to account for inter-relatedness in the ecosystem. Their initial conception of a problem of industrial toxic wastes was redefined as: (1) a *pollution* problem of contamination of the water system; (2) an *economic* problem of the viability of the business enterprises, their contribution to industrial growth, the costs of waste metal removal from the effluent; and whether communal treatment run co-operatively could be cost-effective; (3) a *land use* problem of the incompatibility of other emerging industrial and residential uses; and (4) a *spatial* problem of whether to relocate the businesses near a waste treatment facility or to transport the waste from the industries to a central facility. Figure 6 illustrates the management problems involved. Failure to comply with stipulated effluent discharge standards and to install pollution control measures was generally linked with financial, technical and spatial constraints. The government, through the IDEA project, decided to promote a common wastewater treatment facility, to be managed by a cooperative of metal finishers. But such an approach could only evolve and be successful if the full dimensions of the problem were recognised.

There are also human resource implications. The need to shift from an initial focus on pollution to the development of commitment to watershed or ecosystem management, and the institutional framework to accomplish this, means that tasks which originate from knowledge and expertise in the natural sciences, say of water quality, soon require complementary knowledge and expertise from the social sciences, such as regional land use, urban planning and economic analysis.

Although the need for regional integration mechanisms is obvious, there are many constraints. Within its network approach, the IDEA Programme has made a good start in developing such organisational mechanisms in a number of developing countries. There is further potential to explore practical means for mediation between economic, environmental and social objectives specifically within the context of these regional frameworks.

Achievements and lessons of the IDEA approach

The entire IDEA team participated in developing the approach and methodology outlined in the previous chapter. In addition to the positive outcomes in institutional development, detailed elsewhere in this report, the interactive process of 'learning-by-doing' environmental management also constituted a mark of innovation of the programme. Such mutual learning during a research process is a characteristic of the action research methodology of the programme.

This last section draws on the views of the participants, particularly team leaders, about the approach. They identified a number of achievements, specific examples of which are given in the description of the projects in Appendix A. They also identified a number of 'lessons', or new insights, they learned about the process of good environmental management. The achievements are given first:

1. The approach resulted in well-defined environmental problems, and the identification of the main participants or stakeholders with an interest in those problems.
2. The approach also served to identify the main constraints to good management related to the particular problem.
3. The very process of mutual problem definition resulted in a common appreciation of the problem, as a basis for action.
4. The projects had a clear 'triggering' effect, where inertia or uncoordinated action had previously held sway. In other words, the projects served as catalysts for local action.
5. The project advisory groups provided a forum for the resolution of conflict, and induced a logical synthesis of views and objectives toward practical solutions.
6. As the problem was redefined, the number of relevant stakeholders involved grew, but at a pace which was manageable by the existing group. This process served to focus interactions from wider, diverse perspectives.

7. The projects mobilised local human resources for direct action on the problem, and provided high value interventions at modest cost.
8. The projects lead to the discovery of talented local people, linked them to the challenging tasks, provided an opportunity for further, mutual learning, linkage and recognition, and thus developed a pool of local human resources with diverse skills in environmental management.
9. The projects led to new linkages between people in diverse institutions and organisations concerned with development, some of which will be long lasting.

The process of evaluation also uncovered some other lessons, insights or 'confessions' from the participants. These are:
1. That motivation at the 'grass roots' is an imperative for successful environmental action.
2. That solutions to environmental problems will invariably be found in a wider context than is first apparent.
3. That the provision and discussion of reliable information and data can build trust among participants.
4. That the mass media needs to be involved and cultivated to serve the purposes of environmental education.
5. That solutions usually involve a multiplicity of instruments, ranging from participatory mechanisms to financial inducements and penalties.
6. That the process of developing a project team needs to be recorded and documented to avoid misunderstandings and to generate agreement on, and commitment to, intended actions.
7. That innovatory approaches, because they are often risky in terms of upsetting the status quo, require the development of emotional as well as intellectual commitment.
8. That the interactions between the project teams from various countries, helped to motivate and mobilise local human resources as part of involvement and commitment to a wider international network.

Conclusion

Phase II of the IDEA Programme generated many tangible outputs in environmental management, institutional development and in a methodology for enhancing local capacity to address serious

environmental problems. In particular, the challenge of real-time problems of national concern, combined with the interactions of the diversely skilled professionals, administrators and community and business leaders in the interlinked, international and local networks generated more material for learning than we have been able to analyse and report here. Like the individual projects, the overall programme generated considerable value for money, and the learning to be derived will continue to flow for some time.