

## Introduction

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The significance of environmental and natural resource analysis for capacity building in public policy design and programme planning and evaluation is tremendous. The contribution of the idea of the ‘tragedy of the commons’ by Hardin (1968) is a seminal one, which takes off from the property rights literature and proceeds to discuss the consequences of the lack of property rights and excessive use of common resources. The conventional wisdom predicts that environmental resources having the characteristics of common pool resources would be degraded if regulation or other policy instruments are not in force. The 2009 Nobel Prize winner E. Ostrom (1990) challenges this contention about the need for regulation or privatisation and discusses conditions under which the commons can be successfully managed by resource user groups such that the tragedy is avoided. Nevertheless, the role of the public sector institutions in enforcing rules, particularly access rules for common pool resources, is highlighted. The crux of the need is to develop a proactive public policy and a proactive environmental public policy. While recognising the policy instance in resource management, giving a shape to proactive policies is bristled with insurmountable challenges.

Extensive literature exists on why markets fail in providing public goods and public utilities for human survival and development, and why governmental intervention is needed. Primary education and health, basic shelter, natural environmental quality and drinking water are some examples of common concern. Direct public production or intervention is expected to correct the market distortions. As governments perform these functions, self-interested bureaucrats and political agents may jeopardise efficient government operations resulting in government failure. In recent times, when governments have failed in delivering public supplies private market solutions have been introduced in the public sector production and management spheres. But the interesting part is that both privatisation and government regulation now commonly co-exist in public utility regimes and in activities with social orientations. The changing position of the public sector therefore depends on a web of economic, social and political considerations, continually appraised in the light of experience. In cases where political philosophy dominates, the role of government becomes excessive and reforms are needed either within the public sector itself or again by reversion to the markets.

It is recognised that regulatory policies are crucial for both economic and environmental management. It is important to note that while the role of governmental regulation is challenged in a neoclassical mainstream economic analysis, the new growth theories have reinforced the role of policy and government intervention in education, health, environmental management and infrastructure development. Regulatory episodes, however, have resulted in varying degrees of economic performance and welfare regimes. New development economics goes further to analyse economic performance of nations in

terms of geography, policy and institutions (see Nath and Madhoo, 2008 for a summary of this literature).

Mauritius experimented with a policy of soft and selective regulation, as against hard controls in many other African countries, which immensely contributed to exemplary economic growth and income redistribution. Other small and island states, for example, Malta, Singapore, Seychelles and Fiji manifest varying levels of regulation and controls but their growth trajectories have also been divergent. Singapore is a high performer and Seychelles (an upper middle income country like Mauritius) has also done better with more government regulation. On the other hand, Fiji has had several military coups, leading to decay and stagnation. Even though Fiji is one of the more developed of the Pacific island economies, it remains a developing country with a large subsistence agriculture sector. Malta's position is in the middle. Its economic performance is low among members of the European Union and the state of regulation is highly diluted because of democratic governance.

This shows that both free market policies and selective institutional interventions are necessary for rapid and inclusive economic growth. Designing pragmatic public policies has assumed more significance in recent years when the role of government is more of a facilitator and collaborator. It also has the effect, especially in small and island states, of bringing the value of environment and natural resources and their regulation and conservation onto the agenda, both in the public and the private sector. On the development policy front, the major issue is to identify various implications of environmental regulation on output growth; it is a given fact that regulation, that is controlling and monitoring the use of environmental and natural resources, can have an adverse effect on GDP growth in developing countries in the short run. There are related macroeconomic policy issues also such as implications for unemployment and inflation during the process of managing and conserving these scarce resources. So there is a trade-off between growth and environmental quality. Environmental management also entails microeconomic policy issues governing poverty and income distribution.

With the current financial melt-down and economic recession, the role of regulation and public policy is witnessing a new upsurge globally in which small and island countries will have to readjust their positions in terms of economics, politics and environmental policies. During the period of present crises, the emphasis on recovery and employment generation has diverted budgetary allocations from environmental projects at least in the short run. While emphasis shifts from markets to public policy where both markets and governments are lacking, the real search is for an appropriate mix and a new ethics in management of environmental and natural resources. To get even the right mix, we need to revisit the fundamental principles inherent in policies and in the behaviour of the key players in the field to stimulate fresh and more sustainable styles in public-private or private-public environmental management.

To improve the quality of public sector management, the need for civil service training and improved quality of human resources has attracted the attention of both policy-makers and international donor agencies. It will be instructive here to discuss an interesting policy intervention in Mauritius where, some five years ago, the government contracted a World Bank Public Expenditure Reform Loan (PERL). Besides education, health and social

security, training of civil servants is one of the major segments of PERL. While loans are raised to meet the financing needs of capital investment by the government, the philosophy underlying this loan is different, which makes it interesting. This agreement between the donor and the recipient government lays greater emphasis on social needs, that is, improved allocations to capacity building in the government.

Thus, the financing of civil service training through loan arrangement is special. It is clear that the objectives of this loan policy can have far reaching long-run implications. External loan financed allocations to these social sectors are designed to raise the quality of human resources, at the same time releasing budgetary resources for meeting public sector investment obligations. Moreover, the underlying strategy is that improved human resources will have a positive impact on economic growth. It should, in turn, generate a higher amount of investible resources for financing development needs. This approach is quite useful because small and island states have very visible environmental stress points that can be targeted by improved resources and selective grants.

It is contended that small countries have large public sector budgets, measured by government consumption expenditure as a percent of GDP. The basic argument is that there is a lack of economies of scale in public administration (Alesina and Wacziarg 1998; Rodrik 1996). Government budget size is further enhanced because governments in these economies are required to play a counter-cyclical role of stabilisation as these economies are more open and are prone to external shocks. This explains as well as justifies the need for higher government expenditure in small countries. What is missing in the literature, however, is that environmental and natural resource challenges in small island states necessitate governmental regulation and contribute to larger public budgets. This shows that public economics literature has not accorded enough space for mitigation of environmental and natural resource challenges of small geographical landmass.

While national policies for economic growth and welfare and environmental governance are important, there are two interesting trends that can be observed in the policy arena, namely globalisation and decentralisation of public and environmental policies. The responsibility of environmental management and quality is not limited to a country's geographical boundary and political jurisdiction. International tourism, migration and cross-border business and investments complicate environmental governance. Gradual doses of globalisation and regional integration have therefore increased the role of the national government in formulating regional and global public policies. The jurisdiction of international political and trade diplomacy has been expanded to include typical public policy issues. Thus, country governments are busy expanding the economic space through agreements to promote international trade in goods and services and investment operations. Policy-making and appraisal needs have crossed national boundaries, inviting intergovernmental co-ordination between nations and international institutions for effective management of the economy and conservation of environmental and natural resources.

Decentralised management of public policies has witnessed large scale support both on efficiency and equity grounds. Positive political developments resulting in democratic outcomes have also increased the preference for sub-national and local governments. International donors, while designing conditionalities, have shifted from top-heavy cen-

tral governments to local governments in implementing funded projects involving provision of public goods and services (UNDP 1992; World Bank 1991). It is contended that local governments can have more information on local issues including those in environmental sectors. Efforts for capacity building in local governments have taken off in the light of these developments. It is important to note that the two processes, namely globalisation and decentralisation of public policies, are complementary; both have their distinct jurisdictions in meeting efficiency and equity objectives. It is recognised that some form of regulation at international, regional, national and local level in meeting these objectives is a necessity.

There is an interesting dimension of globalisation that makes the whole exercise of decentralised governance much more promising. With vanishing national boundaries, countries are known by cities, clusters and centres. The attractions of city states, for instance, are the quality of public services and environmental management. Hotels, buildings and multi-national establishments constitute the built environment, entailing both economic and environmental agglomeration economies and diseconomies. Agglomeration effects connect built environments across the world giving a boost to decentralised governance in a globalising world.

### **Environmental governance and public policy concerns in small islands**

Environmental and natural resource analysis has evolved as a major component of public policy analysis because of growing concerns for sustainable development. This concern is more pertinent to island states because of the environmental intensity of their economic sectors. These economies depend more on international tourism, both sea and non-sea, and on exports of primary products which use environmental and natural resources as inputs. This makes a special case for effective environmental governance regimes in small islands against environmental changes and natural calamities.

While growth of GDP (gross domestic product) necessitates the use of environmental and natural resources along with other inputs, the main concern here is what happens to environmental quality when growth takes place. During the process of production for economic growth the planet uses photosynthesis (the process for converting carbon dioxide into oxygen using sunlight) to produce an invisible output. It is called the photosynthetic product of the planet (PPP) and serves as one of the inputs in GDP, and therefore its quality is vitally important. If GDP growth degrades environment and there are no remedial measures, this will adversely affect PPP and also the GDP growth rate in the future. In other words, the GDP growth rate can be sustained only when the policy on protecting the quality of environment is in place and effectively implemented.

The ocean covers more than two thirds of our planet, and small island developing states (SIDS) are generally somewhere in the middle of it. Their environmental priorities concern the islands themselves and their immediate coastal areas, where the balance between population and resources is threatened by human intervention. Nevertheless, from the perspective of the island countries, the ocean is still an unlimited resource relative to the present scale of their human impacts. The problem starts because use of these resources is not sustainable. A comparison of the environmental concerns of small island developing

states with those of developed and other developing countries shows a profound difference of emphasis, at least in the short term. The pollution resulting from modern technological development on such islands is generally modest and much less important to them than the need for sustainable management of their natural resource base. Islands are thus a potential model for the future, facing now what must become the long-term preoccupation of the whole world, as resource degradation approaches the limits of the planet (Dahl 2006).

Global warming and climate-related changes have added new dimensions to environmental governance. Starting with Nordhaus (1982), the climate change economics literature recognises the international scope of the issue and the uneven distribution of policy benefits and costs across time and space. SIDS deserve a special treatment in this field. Small island countries are more exposed to the environmental challenges arising not from within their boundaries, but from the activities of other countries. The whole planet is under stress due to population growth, and rapid growth in consumption to attain rising standards of living adds to the stress. Many small islands are already nearing the limits of their environmental carrying capacity. It is not the case that the population and standard of living increase in such islands and therefore they should worry more about their survival. The tragedy of the situation is that with population growth and the rise in standards of living anywhere and everywhere, it is the whole global environment as a public good that suffers. The impact, however, is not equally distributed. Small tropical coastal islands are more exposed to sea level rise, other global warming induced vagaries of climate change and the decline of global photosynthetic capacity. In response to this, small islands can do only a few things. There has been some reorientation of fiscal policy towards environmental management, evident in budget statements in Papua New Guinea, Jamaica, Malta and Singapore, which are strongly favouring 'green policies' for renewable energy and for promoting environmental services, recycling and protected natural areas.

One may ask the question 'why save only small and island states'? It is possible that their problems are too small to be of global concern. Surely one may equally be disturbed when it comes to the big problems of some large countries in Africa. So when small is beautiful, big can be dreadful. It is nevertheless important to note that small islands have now big environmental problems. So the sequence is small–small, big–big and small–big. In other words, small islands face relatively bigger environmental challenges. Thus, smallness is a curse when we talk of environmental concerns. For SIDS, when the sea level rises it is not a question of adaptation or migration to higher ground, but it is their very survival which is at stake. To mitigate and adapt, small islands will have to survive first, which is the great challenge. Thus, their destiny is shared; to survive they must voice their concerns, but ultimately their future is at the mercy of larger and richer countries whether it is through aid, trade or global warming. The current economic crisis will aggravate these problems because of the decline in global finance for climate change mitigation projects and national and regional initiatives.

The stance of this book is that before we address saving the planet, we should first look at how to save small and island states. These states will be the first to show the benefits of environmental policy intervention and costs of any adverse side-effects. Thus, they can be a cost-effective laboratory for achieving a sustainable world.

## The focus and usefulness of the present book

The study of environmental economics and policy is crucial for economic growth. This subject area cuts across different disciplines, namely economics, engineering, marine and environmental science and ecology. A number of researchers work in the field of marine biodiversity, environmentally friendly technology, international coastal tourism and forestry and fishery management. It is a meeting place for economists, engineers, technologists, biologists, and marine and agricultural scientists, whether working in the public or private sectors or with NGOs and international organisations. It is interesting to note that a special class of interest group has emerged as environmentalists, who may not be specialists but they are more concerned about the quality of environment as legitimate care takers.

This book is a collection of chapters written specially for this purpose, with a multidisciplinary focus. The book comprises 23 chapters arranged across five major sections and is preceded by a detailed overview by Dr John L Roberts. The first section is devoted to theoretical and conceptual issues in environmental and natural resource analysis. Different methods of valuation of environmental resources, including simple and strategic environmental assessments, are reviewed. The taxonomy and political economy of policy instruments are also examined to design 'command and control' and market-based instruments packages to control and mitigate the consequences of excessive use of these resources.

It may look unconventional but we found it worthwhile to include, in section two, four seminal published papers (small papers with hefty contents) as a bridge between the introductory and theoretical chapters and the later sections of the book. These are:

'How Economists See the Environment', Don Fullerton and Robert Stavins, *Nature* 395 (1998): 433–434

'The Obligations of a Policy Economist', Paul R. Portney, *Agricultural and Resource Economics Review*, 33/2 (2004): 159–161

'Economic Growth, Carrying Capacity, and the Environment', Kenneth Arrow et al., *Ecological Economics* 15 (1995) 91–95; *Science* 268: 520–521

'Sustainability: An Economist's Perspective', Robert M Solow, *National Geographic Research and Exploration*: 8 (1992): 3–6

The third section presents case studies on valuation methods in small islands and environmental accounting of these resources for national income accounts. On policy instruments, there is a discussion of tax design for international tourists visiting small islands with the objective of recovering marginal social cost due to international tourism. Road transport, motorisation and pollution necessitate the use of both command and control and economic incentive based policy instruments. There is a case study of the excessive use of common pool resources causing the demise of the Aral Sea inviting international co-operation to address the issue.

The fourth section includes discussion of policies in action to preserve environmental quality. First, implications of climate change policy with reference to small islands are analysed utilising the materials from international agreements. Other policy interventions

are water resources development, coastal and marine resources management in different coastal islands, renewable energy from sugarcane bagasse, game-like policy solutions for environmental management, and disaster management practices with applications to environmental damage. International trade and environmental issues have also been captured.

The final part of the book explores the global dimensions of environmental management using illustrations from the MDGs and their adaptation to the needs of SIDS. This part concludes with the ways in which SIDS are responding to the challenges of achieving sustainable development through improving their resilience to external shocks and better management of their natural resources.

This book follows the scope and content of a combined lecture programme, which includes both theoretical analysis of issues and an exploration of the interface between theory and practical policy and intervention in a global setting, but with special emphasis on small states and small island developing states. The purpose of the book is to provide both a transparent document of the field of study for current and future master's students and a reader for college and university students and teachers in this field elsewhere. This book can also serve as a handy manual for policy-makers in small and island states. To provide a wider perspective, and to link with other master's programmes, the book also includes contributions, as chapters, by other experts in this and related fields. Other specialised contributions include a review of economic instruments for promoting sustainable development and their adaptation to the specificities of SIDS.

The content of the chapters is varied and includes exposition, case-studies, problem-setting exercises for students, references providing citations of the source of theoretical development concepts, research and field study evidence, plus further background reading and sources of data and information.

The main goal of the book is to enhance policy analysis, policy planning and programme evaluation and public administration capability. The precise objectives are:

- To provide a postgraduate level collection of papers for the benefit of those in employment in the public sector and for government officials in economic, social and public affairs ministries, non-profit organisations, parastatal autonomous bodies and local government and others in the private sector to acquire skills in policy-making;
- To prepare individuals to assume key positions of responsibility in government, international institutions and in the private sector by upgrading their knowledge and skills to comparable international standards;
- To develop the ability to identify problems and the capacity for decision-making, leading to practical solutions of local, national, regional and international problems;
- To enhance the individual's capacity to meet emerging challenges within an organisation with a view to increasing domestic and international competitiveness in a rapidly changing global environment; and
- To inform the users to be able to anticipate the often unanticipated consequences of alternative policies and local, national and international projects.

This product would have not seen the light of day without the support of my fellow editors,

namely Dr John Roberts and Dr Yeti Nisha Madhoo. On their behalf, I take this opportunity to thank all my fellow authors for their patience and support to this project. The Commonwealth Secretariat deserves special mention for organising the production and distribution of the book. Constance Vigilance of the Commonwealth Secretariat provided constant and unending support and encouragement across all stages of planning and producing this research output. We offer her our sincere thanks. We gratefully acknowledge the remarkable editorial assistance provided by Mr Anooj Ayrga. I have learnt one thing from him, that is, perseverance is a great asset.

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